Report of

The Maryland Agricultural Society---
The Maryland Farm Bureau, Inc.

INCLUDING REPORTS OF THE

Maryland State Horticultural Society,
Maryland Crop Improvement Association,
Maryland State Beekeepers' Association,
Maryland Vegetable Growers' Association,
Maryland Stockmen's Association,
Maryland Tobacco Growers' Association,
Maryland State Poultry Council,
Associated Women of the
Maryland Farm Bureau,
4-H Club Conference.

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REPORT OF THE

MARYLAND AGRICULTURAL SOCIETY

THE

MARYLAND FARM BUREAU, Inc.

Including Reports of

The Maryland State Horticultural Society
The Maryland Crop Improvement Association
The Maryland State Beekeepers' Association
The Maryland Vegetable Growers' Association
The Maryland Stockmen's Association
The Maryland Tobacco Growers' Association
Maryland State Poultry Council
Associated Women of the Maryland Farm Bureau
4-H Club Conference

Volume XXIV, for the Year 1939

PUBLISHED BY THE SOCIETY, MAY, 1940
EDITED BY C. E. WISE AND T. B. SYMONS
BALTIMORE, MD.

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LETTER OF TRANSMITTAL

To His Excellency, Herbert R. O'Conor,
Governor of Maryland.

Sir:

I herewith submit to you, as directed by the Act incorporating the Maryland Agricultural Society, and also the Horticultural Society, this report for the year 1939, which contains a detailed statement of the receipts and expenditures of the Society as approved by the Executive Committee and Advisory Council. It contains the proceedings of the Twenty-fourth Annual Meeting of the Maryland Agricultural Society, Maryland Farm Bureau, Inc., and annual meetings of the Affiliated Associations.

I trust that an inspection of its contents will convince you that the funds appropriated for this purpose have been wisely and judiciously expended.

Respectfully submitted,

CHARLES E. WISE, JR.,
Secretary.

March, 1940.
Baltimore, Md.

85317

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Associated Women of the Maryland Farm Bureau

President, Mrs. Edwin Fry.....Laytonsville, Md.

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REPORT

OF THE

TWENTY-FOURTH ANNUAL MEETING

OF THE

Maryland Agricultural Society
Maryland Farm Bureau Federation

January 11 and 12, 1940

Lord Baltimore Hotel, Baltimore, Maryland

THURSDAY, JANUARY 11

MORNING SESSION

Songs led by Mr. W. R. McKnight:

MR. TURNER: I declare the 16th Annual Convention of the Maryland Farm Bureau, Inc., now in session. We will have an invocation from our past President, Mr. Nuttle.

MR. NUTTLE: Let us bow our heads, please. Father in Heaven, we have just been singing a prayer that Thou wilt bless America, and because we know that America cannot survive without the rural home; and because we know that the welfare of the whole nation is tied up in the rural home; and because we believe that the work the Farm Bureau is doing is so vital to the rural home, Lord, we pray Thee that Thou wilt bless the Farm Bureau in its efforts to work out the problems that face the farmers of America. Wilt Thou bless our sessions here today and tomorrow, be in everything that is done and consecrate it all to Thine one good, we ask in Christ's name.

MR. TURNER: At the convention in Chicago special emphasis was placed on charter members of the American Farm Bureau, and we here today want to honor as Chairmen this morning and this afternoon, two of our charter members, two men who have been Presidents of their Farm Bureaus since they were organized. The Chairman this morning was one of the original men who met, representing Montgomery County, to form the Maryland Farm Bureau. I expect there is not a man in Maryland more widely known, not a man who has put forth more effort in cooperative work, everything he has done he has done well. He went with us to New Orleans, and I happened to play bridge with him and he beat me all the way down and back. It is with extreme pleasure

that I present to you our friend, J. W. Jones, commonly known as Cy Jones—Mr. Jones.

MR. JONES: Ladies and gentlemen, it is a great pleasure to me to know that I have been working with this organization as long as I have. I have been with it now for twenty years, and my people over in Montgomery County were good enough to want to elect me again for another year, but I told them that it was impossible for me to serve again, I have reached the age where a man has to slow down some, and I have too many things to do, and they could find some other President of the organization over there, but nevertheless I would be very much hurt if I were not on the Board of Directors. Having been one of the first members of the Farm Bureau in the State I feel that I do not want to give up entirely everything, and anything I can possibly do to help the cause of the Farm Bureau in Maryland, I will be only too glad to do.

I believe if there is any one organization in the United States that represents the farmer, it is the Farm Bureau. There are plenty of others, I know, I have been a member of the Grange for over forty years, always have been a member, and will be a member as long as I live, and the same condition exists as far as the Farm Bureau is concerned. They are both very useful, and I have no doubt there are some others just as useful, but I think that representative farmers will all agree that there is no other organization that can quite come up to the Farm Bureau Federation. When we changed our Constitution just sufficiently to allow us to pay our dues and join with the State and National Farm Bureau it was a great gratification to me. I could see very easily how one could not continue without the other. The Montgomery County organization is going strong now, and I hope will continue to increase. It was a little weak two or three years ago, but I think now we can say the Farm Bureau is going right on to the front. I might say that I did have an opportunity to preside at one of these meetings in years gone by, but at this time, just when I am going to step down and out of a lot of things, and get out of the management of the Farm Bureau in Montgomery County, I am particularly pleased to have the arrangers of this program think it worthwhile to honor me with the opportunity of presiding over the meeting this morning.

Now, the first thing on the program will be the President's report, and annual address of the President, Mr. Turner.

MR. TURNER: We hope that though you have stepped out in Montgomery County, that you will always honor us with your presence here at the annual meetings, Mr. Jones.

PRESIDENT'S ANNUAL REPORT

P. C. TURNER, President.

We wish every farmer in Maryland could have joined with about ninety men and women, representing every County in Maryland, and many being Charter members of the Maryland Farm Bureau, who

attended the 21st Annual Meeting of the American Farm Bureau Federation in Chicago which was celebrating the 20th Anniversary of its birth.

Our organization was born just after the termination of the last World War, when the economic balance of the whole world was upset and when organized national policies for labor, capital and industry were set up which fostered monopoly and a tariff policy, all ruinous to agriculture.

How the American Farm Bureau Federation has battled to help the farmers through ups and downs during the past twenty years is a story of achievement that reads like fiction. There are a few words that explain this success—Education, Leadership, Cooperation, Unselfishness and Loyalty. We would use these words as follows: "The man behind the plow was educated to cooperate unselfishly with his neighbor, to elect and loyally support leaders to represent him in solving the economic problems that continually confront agriculture."

The strength of the National Farm Bureau is in its organization:

1st —The men on the farm.

2nd—The County Farm Bureau local.

3rd—The County Farm Bureau.

4th—The State Farm Bureau.

5th—The National Farm Bureau.

Truly this is Democracy in action.

The history of the accomplishments of the American Farm Bureau Federation is long and cannot be recounted here.

* * *

You have bestowed on me the greatest honor that can come to a Maryland farmer—the privilege of being your President for the past year. As such, it has been my pleasure to be a guest at your annual banquets, picnics and other gatherings of our farm folk. These contacts are an education, as they give an insight into the problems and needs of our diversified agriculture as represented in the different sections of the State. It is truly a satisfaction to live in our wonderful State with its fertile land, nearby markets, its intelligent, industrious and cultured people. In every county we find leadership among men and women that is outstanding, and such a people with such a heritage deserve their fair share of the desirable things of life.

Like the National Farm Bureau, our State has gained a rising prestige over the years. Past Presidents E. P. Cohill, James W. Davis and Charles T. Cockey, Jr., all accomplished much. Past President Harry Nuttle is in harness as State and National Director and is giving us the benefit of his sage advice and leadership. Claude Phillips, our Vice-President, and all our County officers and members are all doing their parts.

In Mr. C. E. Wise, Jr., we have a constructive executive, Secretary-Treasurer, an efficient Legislative Agent, who directs our most efficient fieldmen, Wilbert Smith and Martin Sutton. This trio, with Miss Dressel and Miss Myers in the State office, are tireless in their efforts to build a bigger and better Farm Bureau. I know it has been a pleasure to you all, as it has been to me, to cooperate with them.

The cooperation of our Associated Women, capably led by Mrs. Edwin D. Fry, President, Mrs. Claude Phillips, Vice-President, and Mrs. Harry Davis, Secretary-Treasurer, are doing a great job for the Farm Bureau. Past President Mrs. Roy Weagley has brought honor to herself, her County and State by being elected Secretary of the National Associated Women. Mrs. J. W. Jones and Mrs. Harry T. Williams did pioneer work in the years gone by.

We extend our appreciation for the whole-hearted cooperation from the University of Maryland and Extension forces. Dr. Byrd, Dr. Symons, Dr. Steinmeyer, Mr. Oswald and Miss Kellar never fail us when called upon to give inspirational talks at our farm meetings. County Agents and Home Demonstration Agents are working hand in hand with us toward a common goal.

We are proud of the development of the Cooperative movement in Maryland.

Our Farm Bureau Auto and Life Insurance Company is growing and will continue to grow.

Successful county cooperatives dot our State—new ones were born in Washington and Carroll County the past year.

A notable illustration of success is in our banner county of Frederick, which has added to its laurels by petroleum distribution and a real lime plant that has already materially reduced the price of lime in Frederick County and which, I believe, will be a yard stick to lower the price over the entire State.

Southern States Cooperative is growing rapidly. I believe they are destined to play an important role in the welfare of our farmers. I believe minds are coming closer together that will eliminate competition between Coops. in the State.

I believe that the Farm Bureau Cooperative Committee with Roy Weagley as Chairman can and will coordinate the activities of all Coops. in the State to their betterment.

We are proud of the constructive work and results obtained over the years by the Joint Grange-Farm Bureau Tax Committee.

We are proud of our record at Annapolis and Washington.

We are proud that our Farm Bureau is recognized as a spokesman for farmers at both Annapolis and Washington.

We are proud that all of our twenty-three Counties were represented at Chicago.

We are proud that our women had a larger percentage of counties represented than any State.

We are proud that Mr. Charles Boyle of Queen Anne was third high in membership solicitations in the nation.

No organization can live on past performances. We must study the future. Conditions caused by the last World War were responsible for our creation. Europe and Asia have embarked on another death struggle that some people believe will not only bankrupt the world, but through the spread of Communism and Nazism will destroy Christianity and Democracy. We agree with none of these dire predictions. Christianity has weathered all storms down through the ages and will continue to do so.

Democracy, as we know it under the Constitution and the Bill of Rights, will be going strong when Hitler and Stalin are a legend.

The bulwark against these "isms" in America is that 25% of our population live on the farms, around whom other conservative lovers of freedom will rally in enough numbers to protect the nation.

We entered the last war—our people will see to it that we *stay out* of this one. We, along with other groups of people, will feel the economic pinch at the termination of this war, but the experience and strength gained by our organization over the past twenty years will enable us to cope more successfully with problems as they arise.

Congress is now in session. A National election will be held this year. We must be alert to protect the advances we have made.
Our ultimate goal is parity for agriculture.

Our immediate concern is the continuation of the Soil Conservation Act; crop control with parity payments (or farmers tariff) just so long as Federal subsidies are allowed industry through tariffs and a floor stays under wages and hours of labor. I agree with Secretary Wallace that processing taxes should be provided to finance this program.

We approve the continuation of the Surplus Commodity Corporation to buy surpluses for feeding the unemployed, a re-enactment of the emergency interest rates on Land Bank mortgages. We must oppose any move to upset the independent status of the Farm Credit Administration or impair its present efficiency.

There are those in high places and those who aspire to high places who criticize the present agricultural program and we listen in vain for an alternative constructive plan from them.

To Labor we say that minimum Wage and Hour Laws cannot be applied to farmers and that perishable farm crops must be exempted from this law.

We must fight all milk legislation such as the Schulte bill now pending in Congress, which would open up the flood gates and bring surplus milk from the Middle West. This would destroy the markets of our Eastern cities which are already over supplied. Our shippers have gone to great expense to comply with stringent health regulations in these markets.

I have said little on State Legislative problems as this is an off legislative year. During the year a program will be written based on the wishes of our people in the counties, as passed up from the Discussion Groups, through County Farm Bureaus, to our 1941 Annual Convention.

In conclusion, we have extended a formal invitation to the American Farm Bureau Federation to hold the 1940 Annual Convention in Baltimore. We feel that it is fitting that our farmers from the Atlantic to the Pacific and from Canada to the Gulf meet in this historic City of Baltimore and stand at Fort McHenry, the spot that inspired Francis Scott Key to write "The Star Spangled Banner," and rededicate themselves to uphold that flag, the emblem of Democracy and Christianity. I thank you.

MR. JONES: That is a very pleasing address from the President of the Farm Bureau in my estimation. I most heartily approve of everything he referred to.

We will now have the annual report of the Secretary-Treasurer, Mr. Wise.

SECRETARY'S ANNUAL REPORT, 1940

C. E. WISE, JR., Secretary-Treasurer

The year 1939 has been one of continued progress for the Maryland Farm Bureau. Membership has increased by 190 to a total of 4,477. Assets are larger by $1,986.64 to a total of $21,953.38. Committees on taxes, cooperative development, Baltimore produce market and program have been active. When judged by the honors conferred on its leaders and the legislative program passed, Farm Bureau influence and prestige is greater now than ever. More than 85% of our tax recommendations were adopted; diversion of road funds was stopped, appropriations for combatting Bang's disease, Japanese beetle and many special funds were included in the state budget and detrimental labor legislation was defeated. Complete details of the tax program are found in the 1940 tax report and a full summary of laws enacted is included in a legislative report printed in the April News Letter and now available in mimeograph form. A difficult labor situation between producers and the teamsters unions was settled by conferences of your state officers and labor representatives.

Maryland representatives have attended the monthly vegetable growers conference and a Baltimore committee was formed to cooperate with this N. E. group. A constructive program of market information, standardization and marketing has been started. Our leaders played an important part in the defeat of the Schulte Bill in Congress which threatened the Eastern Dairy Markets. Marked assistance was given to the national officers in the fights for parity appropriations, amendments to the Wages and Hours Laws and the Marketing Agreements Act.

In July, 297 took the tour to the New York World's Fair, and in December 89 members registered at the National Convention in Chicago.

Here Maryland counties were all represented and there were more counties represented by women than any other state. Charles I. Boyle of Queen Anne's County was awarded third prize in the National Membership Contest.

During the year, three changes were made in our supporting organizations. The Maryland Ayrshire Breeders affiliated with the Farm Bureau to become the first breed association in our group. Two organizations passed out of existence. The Agricultural Corporation was taken over by the Southern States Cooperative. All stockholders who sent in their shares now have Southern States Stock that is paying 6%. The Eastern Cooperative Livestock Marketing Association stopped its operations and is being liquidated. Efforts were made by your directors to start another agency. There is still a good possibility that a cooperative livestock marketing agency may be established to serve our farmers. This is one objective for 1940.

Other cooperative development has gone ahead slowly and surely. The county cooperatives have improved their methods and their finances, largely due to state office assistance rendered by Martin Sutton.

The sale of two new commodities was started last year. Frederick and Carroll Counties inaugurated petroleum distribution April 3 and the Frederick Cooperative started selling agricultural lime from its own plant in the fall.

Through the efforts of their leaders, Baltimore and Harford Counties have started Hospitalization insurance limited to Farm Bureau members. At Frederick and Easton, Refrigerator Locker Plants are in operation due to Farm Bureau backing and for this service, members have reduced rates.

Local cooperatives were organized and started doing business in Washington County at Hagerstown and in Carroll County at Union Bridge. Both were assisted by Wilbert Smith in the sale of stock and in their organization work.

President Turner has been most helpful in his advice and cooperation. This assistance with that of the fieldmen and office force is what made our 1939 program successful.

Our Planning Groups have met regularly and have contributed much. More of these are essential to help discuss the many state and national questions that are before us now as farmers and as American citizens and then help develop a more concrete, aggressive program for the future.

I secured more satisfaction from reading in the group reports that all wanted the United States to stay out of war than I have from anything in many years. I had two year's acquaintance with war and all its ramifications in 1917 and 1918. Blackouts, bombing, submarines, hospitals and other privations are vivid memories as are the after-effects of the last conflict. There is nothing too much that farmers can do as citizens to perpetuate peace in this country. Let us take the

initiative—talk peace, work for it, and accomplish as much as is within our power to insure it. There is absolutely no excuse for this country getting involved. If this does come about, it will be because of bungling statesmanship or personal greed.

There are other national problems to be considered this year. The Farm program is well established, but needs revision to stimulate real conservation, simplification to bring understanding and financing to secure its permanency.

The Marketing Agreements Act exempts canning crops and other farm products, which should be included by amendment.

Definitions and exemptions are needed in the Wages and Hours Law to insure the unrestricted processing of farm products.

Recognition must be given the Eastern Dairy markets by the Congress and any attempt to lower standards fought vigorously.

Importations of fats, oils, starches and eggs should be made to pay excise taxes to remove the advantage they now have over home products.

Our Farm Credit system must be guarded and every effort made to preserve it as an independent agency that will provide necessary credit for the business of farming.

The recent shift of this agency to the U. S. Department of Agriculture has been discussed by farm leaders and may be one of the major points of controversy in the current Congress. Apparently our Farm Credit system is following the same course as this type of credit has taken in many European countries. There the sequence of development in this program has been

1. Commercial credit breaks down. 2. Governments enter the farm credit field. 3. Cooperative features disappear. 4. Other credit sources dry up. 5. Farm credit policy becomes fused with farm relief (recent move). 6. A very liberal land policy adopted for small farms. 7. Farmers virtually become tenants of the state.

In other words, the Government first gives advice, then lends you easy money and finally takes you over. Maybe this is beside the point, but it is worth considering when the question of The Farm Credit Administration is acted upon. What we really have to answer is—

1. Do we want sound Farm Credit, or
2. Do we want semi-relief farm credit with little regard to its soundness?

Some of the major state problems to be worked out this year are labor relations to insure free marketing of our products, a modern produce market for Baltimore, a study of county and state taxes to reduce and minimize real estate levies, a farm service road program and a more concentrated effort on the development of necessary cooperative services.

Which one of these Farm Bureau projects is the most important?

Our Discussion Groups answered "Education." They said more information will lead to a better understanding of cooperation and what it will do for us.

Let's see what has been done for agriculture by the Government and scrutinize some of the other possibilities so that we may be properly guided.

In the past twelve years, the Government has spent 8½ billion dollars to secure parity for farmers. This has helped, but the goal has not been reached. On September 29 the parity score stood as follows on the basic crops listed—

	Parity Price	Sept. 29 price Actual
Corn	.82	.56
Wheat	1.13	.72
Hay	15.19	7.17
Hogs	9.24	7.06
Butter fat	.33	.24

Cornell has published some interesting figures on the total income to farmers from large and small crops over a 66 year period. These are

	Value of Crops	
	Large Crops	Small Crops
Crop	Millions	Millions
Wheat	$ 632	$ 566
Corn	1171	1280
Hay	648	622
Oats	336	326

Average of a total of 5 crops: Large, $2,934; Small, $2,912.
Large crops returned slightly more than the small ones.

If two extreme years were selected, the smaller crop might be favored, but by and large 33 years out of 66 the large crop brought the farmer more value. It would be interesting to see how livestock products fared during this period. We all like to produce abundant crops, as then there is assured plenty for all.

Wheeler McMillen says "The Tragedy of America is the far too great prevalence of needless poverty."

Murray Lincoln says—"In the pioneer period we struggled to overcome scarcity of food, shelter and raiment. Now, due to what science has accomplished in the production of food and in manufacturing articles, we have arrived at an age of real plenty as far as production goes but we have inadequate consumption because of the lack of purchasing power, because of high distributive costs and because of the profit system with its tariffs, its monopolies and its other restrictions—we have dire poverty amidst great accumulations of wealth; hunger amidst great surpluses of food and unemployment on the part of the same

people whose needs have never been satisfied, let alone their wants and desires."

Surely this situation is a reflection on the statesmanship of this country. Distribution is the problem and one that must be concentrated upon. Better incomes would wipe out our apparent surpluses, according to the Brookings Institute of Economics.

They present some interesting figures to show the possibilities if these needs could be filled by increased income or otherwise.

If the 12,000,000 families now living on income of $1,000 or less per year could increase their incomes to $1,500 it would mean increased expenditures of

2.4 billions for food
1.9 " for housing
1.2 " for clothes
3.9 " for merchandise and services

If these American families had a liberal diet, production of all kinds of goods and services would be increased by 70 to 80%.

The present food stamp plan of the Surplus Commodities Corporation reaches this group and is to be enlarged. Sometime our system will be perfected so that this group will be provided for. Lowering costs through cooperation and the natural pick up in business would help materially.

Perhaps it is time to take the advice of a recognized authority who writes:

"The uniform, constant and uninterrupted effort of every man to better his conditions, the principle from which public and national as well as private opulence is originally derived, is frequently powerful enough to maintain the natural progress of things toward improvement, in spite both of the extravagance of Government, and the greatest errors of administration. Like the unknown principle of animal life, it frequently restores health and vigor to the constitution, in spite not only of the disease, but of the absurd prescriptions of the doctor." This writer is Adam Smith, the founder of economic theory who penned these lines in 1776. When our country was established, the principles laid down in Smith's Inquiry into the Wealth of Nations were used as a guide and are still considered sound.

Much has been said about distribution in a general way. I recently found an interesting table that illustrates how $10.00 is divided between Production and Distribution—When you spend $10.00 for

	You Pay	
Product	To Production	To Distribution
Meat	$4.68	$5.32
Lumber	3.72	6.28
Refrigerators	2.68	7.32
Drugs	1.80	8.20

These products are fair examples and the figures show how much we pay for their distribution. This data indicates a problem and cooperation is tackling it on some items.

Consumers are only 1% organized in this country, so not much has been done on food, clothing and other similar goods. Farmers should be interested in the development of Consumers' Cooperation, as they spend 38% of their cash for food, household goods and clothing. A group in Carroll County has formed a Consumers' Cooperative and the members have started buying these supplies in a small way. News of this spread to Baltimore County where there is considerable interest in this project.

Farmers' cooperatives have been effective in insurance, petroleum products, interest rates, feeds and fertilizer, which amount to only 13% of the farm purchases. More has been accomplished than one realizes until a study is made of these articles and their pre-war costs. Compared to the pre-war prices, the results show all five of the items are at or below that level, with auto liability insurance at 54%, gasoline at 62%, interest rates at 67%, fertilizer at 99% and feeds at 100%. Compare these to farm machinery now at 160% of pre-war and we realize how effective cooperatives have been.

Farmers have pioneered in this new method of distribution and have discovered in it one of the best means of helping themselves. As the volume of cooperative business has increased, it has drawn more and more attention and attacks have been made on cooperatives and cooperators. Attempts have been made to handicap them through legislation. This we must be prepared to combat with our full force. Other attacks take the form of accusing the members of being socialists, communists and reds. No more untrue statement can be made—cooperation is the very antithesis of communism. Opponents say we must preserve capitalism probably with only a vague idea of what they mean by this term.

Yesterday I looked up four words in the dictionary to get a clear understanding of them.

> *Socialism* was defined—a theory of civil policy that aims at the public collective ownership of land and capital and the public collective management of all industries: *synonym*—communism.
>
> *Communism* was defined—common ownership of property, the abolition of private property and state control of labor, religion, social relations, etc.

Is there any farmer cooperator who wants to give up his land, religion, social relations and have a dictator? That's what both of these mean. In Germany and Russia, when the present ruling groups took power, they seized what cooperatives there were for the state.

> Then I looked up *Capitalism* so I could defend it. Here's what I found—Concentrated capital as a power; a system favoring

its (capital) concentration. Do not most of us think of the private ownership of property and then use the word capitalism?

Cooperation was the other word and its definition read—joint action—profit sharing—cooperating together by industrial cooperation.

It seemed to me that here was just what was needed to correct or check this concentration and help the whole situation. It is a needed adjunct to our present system, one that has been developed in the process of business. It is evolution, not revolution. To preserve and protect our present system, we must get more cooperation into capitalism. To me it holds out a hope for correcting more and more of our difficulties in the distribution of products and also in the distribution of wealth if we will give it a chance.

Cooperators do not expect to handle all the business or even the majority of it. In the competition between cooperatives and other business, the amount handled after some 10% is reached acts as a governor on prices with increasing effects as the percentage grows. This also acts as a lever in breaking up monopolies and improves the quality and service. Competition between cooperatives and corporations is growing and in future years may be the big business battle.

The possibilities are many for the purchasing cooperatives, which to date have proven the easiest for farmers to develop. One reason advanced for this is that the farmer is the consumer and has the control of how he spends his money. In marketing, he is the producer and the consumers of his products have this control. Marketing has been difficult and will develop more slowly although the possibilities are ever greater.

Suppose that Maryland farmers could get 63% of the consumers dollar instead of the present 40% for what they sell. Their incomes would be increased more than 50% or around $25,000,000.

Is this not worth striving for? Such a project will take a long time. It depends on voluntary effort and will be difficult, but it is worth all the struggle.

In 1923, a group of Maryland farm leaders had visions of this opportunity, and the courage and conviction to do something about it. Thus our state organization was formed sixteen years ago and Maryland joined the American Farm Bureau. Some hopes have been realized, others have not, but the organization has gone forward and has done many constructive things for the farmers of Maryland.

Our accomplishments this year and in past years were made possible by the efforts of these far-sighted leaders who were responsible for this start in 1923.

The blue and gold Charter Member buttons you see on many here today, designate the founders of our state organization. Let us commend them for their vision and the benefits accruing to agriculture

these 16 years and charge ourselves to carry on to greater achievements for the betterment of our people.

MR. JONES: Thank you, Mr. Wise, for a very instructive report. I think we should all feel very much encouraged at hearing the Secretary's report this morning.

Now, we have a report from some of the auxiliary activities, and first we will have a report, one of the best,—I think we all admit very freely that the Maryland Farm Bureau, Incorporated, as it is now called, was responsible for this organization coming into the State. They have been a wonderful help to the farmers. I present Mr. Zach Turner, State Agent of the Farm Bureau Cooperative Insurance Companies.

REPORT ON FARM BUREAU INSURANCE

ZACH TURNER, State Agent.

At this time it gives me lots of satisfaction to be able to give our Insurance report before the 24th Annual Meeting of our sponsoring organization—the Maryland Farm Bureau—as to the progress we have made in Automobile and Life Insurance Services.

I am going to give a report also on Maryland, Delaware and District of Columbia, because all these states are handled through this office.

I am not going to tire you folks with a lot of figures—because after all they are tiresome and not remembered, but I do feel you would be interested to know our record for 1939.

States	Life	Auto	T. A.
Maryland	$723,324	8,168	1,114
Delaware	142,016	1,840	132
D. of C.	98,500	1,110	110
Total	963,840	11,118	1,356

This is our record for 1939 in the Tri-State District—an increase over 1938.

	Maryland	Delaware	D. C.
Auto	110%	123%	125%
Life	119%	111%	125%

We are expecting 1940 to show greater achievement—disappointed if not. I also think you would be interested in knowing what we have in force in the Tri-State territory

	Maryland	Delaware	D. C.	All States
Auto	$ 22,153	$ 3,184	$ 1,572	$ 257,511
Life	1,550,597	188,923	79,832	30,913,706
T. A.	2,868	256	122	32,525

Assets total over $9,758,596.19.

The increase in membership and financial strength of the Farm Bureau Insurance Companies has been accomplished through your efforts to serve yourself and others cooperatively. These three insurance services have been introduced to its many present and prospective policyholders by the Farm Bureaus and Cooperative Associations in nine states and D. C. These organizations are a part of the world-wide consumer cooperative movement that holds out much to a confused and anxious people—confused because they see low farm prices, lack of employment, and the threat of war, when there should be peace and plenty. Those people have in their own hands the tools with which they can fashion their own destiny—if they will use them.

We should organize to take over the ownership, on a truly cooperative basis, of those agencies through which we obtain goods and services, so that, through democratic control of those agencies, the earnings and savings go to the people whose purchases made the business possible.

Through your share, as a policy holder, in the ownership of these insurance companies, you have set a splendid example of possible effort in that direction.

Now, folks, you have often heard that Farm Bureau Insurance saved approximately 25% on the cost of insurance service.

Did one ever stop to think of what this amounted to in the way of savings in dollars and cents—only $75,239.50 to those who participated in Maryland, Delaware and D. C. If these users would take this savings and place it in Life Insurance—this is what it would accomplish: Purchase approximately $350,000 Ordinary Life annually. Just think of the number of widows and orphans who would have protection, think of the foreclosed farms it would prevent, and, last of all, it would create an old-age income.

We have in Maryland, Delaware and D. C. 164 representatives. This group of loyal workers will call on an average each year of 38,000 families. The majority will have the Farm Bureau story brought in the presentation of insurance.

Tell your friends and neighbors about Farm Bureau Insurance Services. We are hoping in 1940 our representatives will have an opportunity to discuss insurance at your local discussion group meetings; if you notify your manager or State Office we will be more than glad to attend.

Our big problem is informing our members of extended service they are now receiving under their auto policy. A better understanding of their policies will help all. I am also suggesting we hold some policyholder meetings with the consent and cooperation of the various County Farm Bureau Presidents and Secretaries. If this can be accomplished, it will have a tendency to improve the knowledge of Farm Bureau Insurance Services.

The purpose of the meetings is not to secure business, but with an idea of educating our policy holders and Farm Bureau leaders on our

services so, when unfair competition presents itself, they will be in a better position to defend their own organization.

The incident that really sold me on Life Insurance (pardon personal experience) was one day I was making a trip by train. My wife and family saw me off. After entering the Pennsylvania station the porter took my baggage to the berth. There was left five minutes before the train pulled out. I was standing on a step of the car saying goodbye. My little boy eleven years standing by uttered these words "Daddy be careful and don't get hurt." Right then a funny feeling came over me as to my responsibilities. I realized then more than ever before. Sonny realized the value of Dad and an income. I went back to my berth and analyzed my responsibilities and budgeted my income and revised my life insurance program. What I did was to place all policies on a monthly income and completed my life insurance program as soon as I returned back home, of which I am mighty proud.

If time would permit I could give you some real facts where life insurance played the most important part in the settling of an estate.

Perhaps you don't think much of me (a life insurance policy) at times, but if you were to wake up some morning and realize you did not have me, you start that day with a very weary feeling.

From me you get food, clothing, shelter, education for (Bob and Mary). Pay off the mortgage and such luxuries as you enjoy. But I am exacting and I am a jealous mistress. Sometimes you hardly appreciate me at all. You make slighting remarks about me at times and neglect me. We have seen Mothers with this attitude. Remember folks widows and orphans appreciate me. What if I should leave you—your happiness would flee and your bank account would dwindle—so after all, I'm mighty important to you. I'm your job. Cherish me, take good care of me, save those premiums when due and I'll take good care of you—A Farm Bureau Life Insurance policy.

The late President Calvin Coolidge said: "I should like to appeal particularly to the young people. I urge young men and women to secure all the life insurance they can while they are young, as a savings plan for their future and to create estates to protect their dependents. And I urge every father and mother, as they are interested in the future of their children, to see that they are taught the purpose and value of life insurance. "Parents should help their children to take out policies at as early an age as possible. The earlier the age, the lower the rate. Taking out either Life or Endowment policies for children and turning the policies over to them, as soon as they are self-supporting will not only start them out in life with a gift of real value, but will assist them in early acquiring a sense of responsibility and habits of saving which will help them through their lives."

All forms of insurance are important and should be carried. Auto, Property, Fire, T. A., General Liability—but above all, Life.

Maryland, Delaware and D. C. have enjoyed a mighty fine year and are looking forth to 1940 a year of real opportunities to all—those who are willing to put forth some real effort not only in Insurance but in any cooperative endeavor.

"Opportunity" by A. H. Hammond expresses our outlook:

O—ut every morning with the break of day,
Opportunity knocks as if to say—
P—ut away that pessimistic idea "it can't be done,"
P—ut on the optimistic armor "I can" and all is won.
O—ut every night at the close of day,
Opportunity knocks again as if to say—
R—iches, Health, Prosperity and Love—the race is on.
T—ruly are your trophies of life's battle you have won.
U—nited with all of life's optimistic views.
N—othing can change you, regardless the news.
I—t is opportunity that never leaves your door,
T—hen stand up and walk, don't crawl on the floor,
Y—our work is a pleasure, your ideas are fine, because you can truthfully say
"Opportunity is Mine."

I want to thank the Maryland Farm Bureau for their cooperation and support. Also wish the State and County organization all the success in the world during 1940.

I think I can make this statement for the agency force and it will be correct. We are all proud we are representing Farm Bureau Insurance Services and proud of the fact we are identified with the Maryland Farm Bureau. I thank you.

MR. JONES: It sounds to me as if we are having a lot of very fine reports this morning. We will now hear from the Southern States Cooperative, Mr. T. K. Wolfe.

COOPERATIVES COOPERATE TO BRING BETTER TIMES

By T. K. WOLFE

It is a pleasure and a privilege to appear on the Farm Bureau program—an organization that has done and is doing so much for Maryland agriculture. Mr. Wysor has asked me to express his regrets in his inability to be here today and to extend his best wishes to the officers, directors and members of your organization. Today he was supposed to be here, also to attend a meeting of the Directors of the National Cooperative Council in Washington, and, besides, to attend a board meeting of the Federal Reserve Bank in Richmond. To tell you the truth, I don't know where he is and I am not so sure he knows himself.

Mr. Wise, your Secretary, asked Mr. Wysor to make a brief progress report of Southern States Cooperative. I would fall short of my responsibility if it were not stated at the beginning that a large measure

of the success of Southern States is due to the loyal and splendid support of the Farm Bureau as an organization and of the members as individuals. It is a pleasure to me personally and to the management of Southern States to give this credit to those who so justly deserve it.

I wish that there were time to list some of the many instances of services rendered farmers of Maryland by your organization in legislative matters and otherwise. But time does not permit.

Better Service the Aim

Southern States has joined hands with the Farm Bureau in order that better cooperative service be rendered agriculture. Southern States, with a membership of some 89,000 farmers—many of which are Maryland farmers—is farmer-owned and controlled. It is just as much a Maryland organization as it is a North Carolina, Virginia, Delaware, or West Virginia organization. It is serving as the economic arm for purchasing of the cooperative set-up in Maryland. Through it Maryland farmers are cooperating with farmers in the other four states mentioned in securing quality farm supplies at a saving in cost. It is now working with all of the county units of the Farm Bureau having economic departments, with the exception of one and even in that case, to some extent.

Best Position in Its History

Southern States is in the best position in its history. You have it equipped with modern and well-located plants—eleven of them. You have it manned with a competent, aggressive and experienced staff. You have increased its volume to a point where costs are already very low and getting lower each year. Thereby you have made Southern States a really effective pace setter. You have at last gotten the organization into a pretty safe financial position.

At the end of this year, on June 30th, you will have accumulated in Southern States Cooperative about $2,000,000 of your own capital for the protection of farmers' interests. You will owe at that time about $1,000,000. This means the completion of the financing of the institution is in sight. You will have it finished financially when it does not owe a dollar at the low point on June 30th and borrows only for seasonal needs. It seems probable that that situation can be attained in three years.

Southern States can then return all or substantially all of its savings or earnings in patronage dividends. Up to now it has placed more than one-third of earnings into reserve funds to build up needed working capital.

The volume goal for the year is $15,000,000. To make it we must gain nearly 20% over last year's business, amounting to $12,800,000.

The tonnage of farm supplies handled last year was 288,240. The goal this year is 323,000 tons.

Half the fiscal year is behind us. But the best half is before us and Southern States is well on the way toward making, and even exceeding these goals. As a matter of fact, the gain in volume for the first half of the fiscal year was 23% as compared with the preceding year. Increased volume and rising markets resulted in net savings or earnings for the first half in excess of $250,000, which compares with $109,000 for the same period the year preceding.

Build for Today and Tomorrow

Let us consider for a moment the place the Farm Bureau and Southern States have in the life and welfare of the farmers who use them. They are more than cooperative organizations to be operated by members in their own interest. Just as you acquire land, flocks and herds and improve them to make a better living for yourselves and your families and to pass them on as a heritage, you have built these two cooperatives. They are just as tangible as land, as flocks, as herds. These two cooperatives are aiding in developing higher standards of living for farm families of today, and if we do our part, of tomorrow.

It is our responsibility to continue to build soundly . . . to build greater and better organizations. Through cooperation farmers will secure for themselves and their children something better. They will secure spiritual and economic independence.

Keep In Step With Younger Farmers

The older members of the Farm Bureau and Southern States helped to develop the organizations. They know from their earlier experience what cooperation means. Cooperation has almost become a religion with them.

But there are many young men becoming farmers. They often take the Farm Bureau and Southern States for granted. They have not experienced the treatment given farmers by feed dealers, fertilizer companies, seedsmen, etc., before 1923. They have never known the day when there were no open formula feeds and fertilizers and Known Origin, adapted seed available.

This younger group, unlike the older, often does not have the sense of ownership, pride and satisfaction of being a part of the Farm Bureau and Southern States. It bothers some of us that this young group of farmers takes the Farm Bureau and Southern States for granted and challenges them in ways the older group never did. We must accept the challenge and so handle the affairs of the organization as to warrant their confidence, support and patronage.

No group should support the Farm Bureau and Southern States if it isn't economically justified. It has been my observation that farmers use the cooperatives when it is good business for them to do so and stop when it isn't. This viewpoint will become more prevalent. *We should encourage it.*

It is well to keep in mind that these younger farmers, those who have started farming since 1930, are more inclined to go ahead and accept present conditions as normal. They know nothing first-hand of the "good days" of 1929 and earlier. This situation is a distinct disadvantage.

Give these younger farmers a part to play. Elect them to the Boards of Directors when they deserve the honor. Rotate Board members. Don't re-elect the same members year after year. To do so is often deadening and kills the interest and loyalty that others would have.

Days of Opportunity and Promise

Let us make the Farm Bureau and Southern States not only organizations for today but a heritage for tomorrow. Let us make them bring us days of opportunity and promise—and remove the days of despair.

Man, through time apace has always sought perfection but, probably will never reach it but will forever seek.

MR. JONES: I am going to be very proud to introduce the next speaker. I would not be very much surprised if you know her as well as I do; she is very easy to be acquainted with. We in Montgomery County, where she comes from, think there is nobody like this lady member of the Farm Bureau, Mrs. Edwin Fry, State Chairman of the Associated Women of the Maryland Farm Bureau, Inc. We are very glad indeed to hear from Mrs. Fry at this time.

REPORT OF THE ASSOCIATED WOMEN OF THE FARM BUREAU

MRS. EDWIN FRY, Chairman

In taking stock of ourselves and our accomplishments, during the past year, just where do we stand in relation to our progress in the past and our plans for the future? Plans for assistance in an active way in carrying forward such phases of the Farm Bureau program of creative interest to women is one of the objectives stated in our Constitution. That is pretty all-inclusive and certainly a challenge to all of us.

Membership is the most important factor in any organization and that membership must be an informed, interested one for greatest efficiency. As men and women meet and discuss together common farm problems their interest grows and they naturally want to assume their share of responsibility as members of the organization best equipped to bring about the results they seek. Last year the Associated Women hoped to secure at least 100 new memberships in Farm Bureau, and though we were not able to reach our goal, women did take an active part in membership campaigns and secured new members. We found that where discussion groups were active the field was fertile. Soliciting membership is also a splendid way to classify Farm Bureau facts in your own mind.

Problems which affect us economically are of interest and vital importance to most of us, both men and women, and, if given the opportunity

to discuss and plan together, we will all have more to contribute as our understanding of Farm Bureau and its objectives grows upon us. So, let's have more home meetings of planning groups in 1940 and watch our membership grow. The Associated Women pledge their support in the formation of such new groups whenever and wherever possible.

President O'Neal in his annual address commended the work done by women and expressed appreciation of the increasing part that they are playing in deliberations and decisions of the national organization, saying, "Let us give them, in all our states, our earnest support and our continued and complete cooperation." As you know, national recognition was given to Maryland in the election of our former State Chairman, Mrs. Weagley, and in the appointment of myself as a member of the Credentials Committee.

In Maryland, we are fortunate in having a full measure of support from the state organization and growing support in county groups. Every county is now an organized Farm Bureau county and we are hopeful of having a Chairman of Associated Women in every county before long.

Baltimore County leads in being the first county to actively organize on March 17, 1939, and to elect officers and delegates to the annual meeting. Frederick County on December 12, 1939, was the second county to organize and elect their own officers and delegates, and Caroline County was the third. Women in Carroll County, although not yet organized, have been very active during the past year under the leadership of their chairman, Mrs. Guy Carlisle.

It was my privilege to serve as a member of the State Committee on Observance of the 25th Anniversary of the Inauguration of Extension Work by the Federal Government and State, which met at College Park on May 6, to discuss ways and means in which the State and County Committee might give suitable recognition to this event, in the history of extension work.

The Associated Women chose to give recognition by offering the following recommendation to the Board of Directors of the Maryland Farm Bureau, Inc.; That the Maryland Farm Bureau, Inc., appropriate a sum of money, comparable with that given 4-H boys, for awards to girls of the 4-H clubs, who stand high in their achievements. It seemed altogether appropriate, this year of commemoration of 25 years of extension work, to make the awards in the form of five scholarships to Club Week. Five girls were selected by the committee, from different portions of the State, in the Senior Council or older age group, who had backgrounds of outstanding 4-H achievement in proportion to their opportunities, church, community and home service—girls who also had poise and the ability to speak before groups about their experiences. Two girls added much to illustrate what Miss Emerson had to tell of 4-H work in her inspirational talk before the Associated Women's meeting yesterday. Girls receiving scholarships not attending yesterday's meeting wrote appreciative letters.

Over a thousand women in twenty-five states participated in last year's Public Speaking Contest, and in Maryland on September 27th in Baltimore, Washington, Baltimore and Anne Arundel counties were represented by Mrs. Reginald Ankeney, Mrs. Burton Twining and Mrs. Cecil B. Knighton, respectively, all of whom gave splendid talks on "The Farmer's Stake in World Peace." Baltimore County had previously held a county elimination contest and Frederick and Montgomery County contestants were unfortunately unable to compete due to illness. Mrs. Ankeney, the winner, later represented Maryland most creditably in the Northeastern Regional Contest in Bridgeport, Connecticut, on October 6.

Plans are complete for entering this year's contest with "Producer-Consumer Relations" as the subject. In addition to the few who compete, there will be many more women interested in studying and discussing these problems.

What have we done toward improving rural health conditions in 1939? Mrs. Roy Weagley addressed the first all-Maryland Health Conference in Baltimore on May 27th on "The Health Needs of the Farmer." Her talk was well received and she was subsequently appointed Vice-Chairman of the Committee formed to study health needs and ways of meeting them in our State.

Mrs. Weagley as national representative and member of the Executive Committee, and your Chairman as representative of the Maryland Farm Bureau, Inc., attended and participated in the luncheon discussion annual meeting of the National Council for Mothers and Babies, on November 4, in Washington. We came away feeling, more than ever, the great need for better health opportunities for rural people. The American Farm Bureau Federation is working to help bring about better health legislation nationally, but we need not wait for that. Our county health officers and nurses will be only too thankful for interest and help on the part of lay people in carrying out local programs. Schedules of the various clinics to be held in your county are available from your officers, and you may secure them and pass the information on to those in need of the services offered. Too many rural people fail to take advantage of services we now have, through lack of knowledge that they exist.

Our Vice-Chairman, Mrs. C. C. Phillips, braved severe weather to represent us at the March conference, and she brought back an excellent report of the Northeast Regional held in Albany, New York.

Mrs. Harry L. Davis, Secretary, and your Chairman attended and addressed a meeting of women of Calvert County in Prince Frederick early in June and it is our hope that during the coming year, organization of an active group there will be accomplished.

During the past year your Chairman has, in addition to meetings mentioned previously, attended the June and October conferences of the Northeastern Region in New York and Bridgeport and the 21st National Convention of the American Farm Bureau Federation and the Fifth National Convention of the Associated Women held in conjunction with

it in Chicago the week of December 3rd. There were nineteen Maryland women registered, a splendid representation, and I wish to thank them for the part they played in bringing to Maryland one of the three awards made to Associated Women, a fitted traveling bag, which I brought with me to this convention. Maryland had the most counties represented by women proportionately.

Your Chairman also addressed five annual Farm Bureau County meetings, the Frederick County Picnic, meetings of Associated Women in several counties, 4-H Club Assembly at University of Maryland during club week, one county-wide annual meeting of Homemakers' Clubs and two women's civic clubs on Women's part in Farm Bureau work, attended regularly the meetings of the Board of Directors, including Farm Bureau Day at the Timonium Fair, when we were guests of the Fair Board at luncheon.

During the year just past, Associated Women have also helped in program planning, with publicity, and usually, last but not least, in the matter of providing suitable refreshments for our gatherings.

To come back again to the Extension Service, for our relationship is very close, and many of our objectives similar, may we continue to coordinate our programs whenever possible for the common good? The 4-H youth look to us to build our bridges well for those "whose feet will pass this way."

What we, as parents and leaders, believe and live today, will largely determine for our children the character and scope of their citizenship tomorow. Because the kind of a home is determined by the father and the mother, so intelligent mothers of today widen their horizons to beyond the walls of home, extend their interests, housekeeping and home-making to the community, the nation and the world.

With world conditions changing so constantly, increasing education on the part of all is a necessity. I like Horace Mann's definition of education: "A man is not educated because he buys a book; he is not educated because he reads a book, though it should be the very best book that ever was written, and should enumerate and unfold all the laws of God. He only is educated who practices according to the laws of God." Let us practice more diligently in this new year.

Mrs. Marshall, winner of the National Public Speaking contest, urged us to hold fast to neutrality with both hands. Associated women wish to help build for better international attitudes among children, feeling it is a most important means of attaining ultimate tolerance and understanding necessary to peace, in this inter-related world.

And so, in conclusion, I believe that women's work in Farm Bureau progresses steadily and surely. These words of a Maryland woman, Anna Hamilton Wood, I leave with you:

> "Lord, let me keep my faith in those I love,
> And in the ultimate expressions of the good
> In men and nations. May my ideals stand,

Untarnished and unshattered. Let me prove
There is a power that cannot be withstood
Faith, Love and Justice, climbing hand in hand."

MR. JONES: Friends, we have been hoping for a long time that the ladies would take a more active part in the Farm Bureau, and now these ladies are spending a lot of energy in bringing that to pass. If they do not get their organization together and go right along with us men, I will be very much surprised. The only anxiety I have is that they will organize to the extent of controlling us so that we will have to go along with them. We will now have some announcements from Mr. Wise.

(Mr. Wise made some announcements).

MR. JONES: The next gentleman I have the pleasure of introducing to you needs no introduction to any of you. I know you are very familiar with him, Dr. T. B. Symons, Dean of the College of Agriculture, University of Maryland.

WHERE ARE WE IN THE FARM PROGRAM?

DR. T. B. SYMONS, Dean and Director of Extension
University of Maryland

It is a pleasure to again greet the leaders in the Maryland Farm Bureau, which means the leaders in Maryland Agriculture and rural life. As I look back over the year that has passed since we assembled here last, I am impressed with many things, for truly, it has been a momentous year. But, standing out like a beacon of optimism for the future is one fact, it seems to me. The same fine spirit of cooperation that has existed among all agencies and organizations working in behalf of agriculture in the State for so many years has persisted through 1939, and promises to continue into the future indefinitely. A year ago I expressed the firm belief that we could tackle with enthusiasm the job of cooperatively bringing about a better and more prosperous rural Maryland, and I repeat, with even greater confidence, that belief today.

Anniversaries, whether they be birthdays of individuals or annual meetings of organizations, are times when people just seem to naturally take stock of the period that has passed and do more or less planning for the future. New Year's resolutions are the outcome of such stock-taking and planning. They are attempts at improvement. Those of us engaged in Extension work have been doing a lot of stock-taking and planning during the past year, because it marked the twenty-fifth anniversary of organized extension work. It challenged the best planning of all of us, with a view to greater accomplishments in the years that are to come. Likewise, at this meeting you will give careful consideration to the progress of your organization during the year and to charting its course for the coming year.

Beginning in 1933, Maryland farmers have participated, along with farmers throughout the United States, in some very specific programs designed to improve the situation of those engaged in the agricultural

industry. New programs have been launched at what seemed like frequent intervals, so frequently at times that it was difficult to keep in touch with them and what they were intended to accomplish. You will note that my topic is "Where Are We in the Farm *Program*?" referring to one program, rather than a number of programs. It was stated that way intentionally, in order to emphasize that one development of the past year has been to correlate the many programs, which at times did not clearly reflect their connection, into a unified program for agriculture. I will attempt to give a very brief glimpse of the progress that has been made in the various parts of such a unified program.

Before focusing our attention directly on the farm program, it may be interesting to glance at the situation with respect to income as compared with the situation in some former years.

The national cash income from farm marketings in 1939 is estimated at $7,625,000,000, and the Government payments at $675,000,000, making a total cash income of $8,300,000,000. This compares with cash income from farm marketings in 1938 of $7,627,000,000, payments by the Government of $482,000,000, and a total cash income of $8,109,000,000. The total cash farm income in 1932 was $4,682,000,000, and in 1919 it was $14,436,000,000.

Here are the corresponding figures for the State of Maryland: Cash income from marketings in 1939, estimated at $63,000,000; Government payments, at $2,001,000; making a total cash income of $65,001,000. In 1938, the cash income from farm marketings was $64,240,000; the Government payments amounted to $1,452,000; making a total of $65,692,000. In 1932, the cash farm income in Maryland was $40,000,000, and in 1919, it was $100,000,000.

These figures may illustrate rather clearly why there appear to be more dollars for the farmer to spend in some years than in others, but they are only a part of the picture from which a true conception of the situation in agriculture can be obtained. The other essential part of the picture is the quantity that can be purchased with the dollars in the form of equipment, supplies, labor, services, etc., which must be used in the farm business. By way of illustration, a binder which in 1914 could be bought for about $112 costs at present near $250. So far as purchasing a binder, or other articles which had undergone similar change in cost, a farmer would need to have more than twice as great farm income in dollars in 1940 to be as well off as he was in 1914.

As you know, a definite aim of the farm programs of the last few years has been to establish more nearly parity between the prices of things farmers sell and things they buy.

Of course, the farm programs are by no means the only factors which have a strong influence upon the relation between prices of various commodities. Right at present the situation in that respect is exceptionally uncertain because of the war. Just what effect the war may have on agriculture in this country and in Maryland, no one can

foresee, even during the coming year. So far, it can be said that it has altered world trade currents in such manner as to make prospects for United States farm export poorer than they would have been had the world stayed at peace. Fresh apples and pears from the United States are virtually shut out of British and French markets by war trade restrictions, such as import licensing and exchange control. The British, heaviest buyers of our pork products, are using import licenses, exchange controls, and fixed prices and following a buying program which favors pork products from other nations over those from the United States. Neutrals in the war zone are taking more pork and lard from us, but not enough to make up for the decline in takings by the belligerents. Indirectly the British guarantee of a high fixed price for Canadian pork may benefit the United States hog industry by creating a demand at good prices for more pork than Canada can supply, and thus causing Canadian packers to buy United States hogs. However, if the war lasts long, this situation is fairly sure to stimulate Canadian hog production and pork exports, making more competition in the world market for pork products from this country.

Owing to impending crop losses caused by drought, the United States has little wheat at present to place on the world market. If American wheat were on the export market, prospects of its sale would be cut by the naval blockade of German-controlled territory, the wheat rationing that is going on in belligerent and neutral countries, and the British selective buying policy which favors Empire producers, especially Canada.

No one knows how long the war may last, the trend it may take, or the nations that may be involved. Nor, can anyone know to what extent wartime demand for farm products will be felt in the United States and in Maryland. It is not known what shipping conditions will be. It is certain, however, that as long as the war lasts, it will be an important market influence—one way or the other. On the other hand, to consider the war as a solution, or even a major factor in the solution of our farm problem would be short-sighted. We know that war usually destroys or reduces the purchasing power of belligerent countries and generally upsets economic conditions. Our experience in the period following the last war impressed that fact upon our minds. We have been devoting great efforts during recent years to building machinery to help adjust agriculture to unsettled and changing conditions and it would seem that there is added reason for strengthening such machinery in order to better adjust our farming to conditions as they develop in the immediate future.

In thinking of the situation today in comparison with that existing early in the last war, there are three far-reaching developments which, it seems to me, give great hope that the agriculture of this country and of Maryland may escape some of the difficulties encountered during and following the war. There is no fundamental reason for mentioning one of these developments ahead of the others, for they are all important and it is their combined effect, rather than the effect of any one factor that gives promise.

In the first place, those engaged in agriculture today, both on their farms and in their homes, are making use of the help that is available from many sources. They are using the results and discoveries of scientific research, information on economic conditions and trends, and, in fact, planning their business operations in the light of a better understanding of the many factors that have an effect on the outcome of their efforts. In short, they have made such information a part of their working capital, which was not the case some twenty-five years ago. To bring about that development was one of the fundamental reasons for establishing organized extension work throughout the country and I like to think that the Extension Service in Maryland, and in the other states, deserve a measure of credit for accomplishing that result.

In the second place, a much larger number of rural people are working together in trying to find solutions for their various problems—are giving careful study and the benefit of their experience and judgment in planning the course of agriculture. The several so-called action programs of the last few years have not only enlisted thousands of farmers in this state and millions in the United States in cooperative efforts toward definite goals, but have drafted many for leadership on committees and otherwise who had not exercised their abilities in that line in former years. It is true, of course, that the type of cooperation required in these programs is somewhat different from the cooperation we have been accustomed to think of in the various organizations. We cannot measure, nor predict what the future value may be of the experience so many are having in working together, and in both leadership and followship.

The third great development is the extent to which the people of the country, both rural and to quite an extent those engaged in other modes of life, have been made conservation conscious. Saving our great natural resources has become an important consideration in the minds of people generally. I shall say more on that topic in connection with a summary of the progress in some of the farm programs, but whatever may be the trend or the outcome of the war, conservation of our resources cannot be considered in any other way than as an effective method of strengthening the position of this country, and the agricultural industry of this country. It is extremely fortunate, therefore, that the conservation concept has become so thoroughly established in the minds of people of all classes, and that the programs in behalf of agriculture are so definitely focused in that direction.

Maryland, as you know, is participating in all of the programs that have been launched under the auspices of the Federal Government in cooperation with the several states. Naturally some of these programs, or some aspects of them, have not been as well adapted to the conditions in our State as we would like. Leaders in Maryland agriculture have worked faithfully, with a broad and sympathetic attitude toward the needs of agriculture in the country as a whole, but with determined

efforts to adapt the programs to Maryland conditions as nearly as possible. Progress has been made each year.

The Triple-A program is the oldest, although it has undergone substantial changes since its inception. From a program directed principally at adjustment of production, it has developed more and more into a program of conservation. During the year 1939, approximately 23,249 farmers in Maryland participated in the Triple-A program. The farms owned and operated by those participating represented approximately 72 per cent of the farm land in the State. In return for their cooperation in this program, these 23,249 farmers received in cash payments approximately $2,001,000. From the beginning of the Triple-A program there has been paid to Maryland farmers approximately $10,100,000 as benefit payments, or as payments earned by practicing approved conservation methods on their farms.

As an indication of the tangible results in the way of conservation that are being obtained, let us compare the extent to which some important soil-building practices are being carried out now and a few years ago. The total figures for 1939 are not yet available, so we will look at 1936 and 1938. In 1936, new seedings of grasses and legumes were made on 306,858 acres, and in 1938 on 562,002 acres; green manure crops were grown on 32,738 acres in 1936 and on 101,155 acres in 1938; applications of lime in 1936 amounted to 72,177 tons and in 1938 to 160,095 tons; and applications of superphosphate in 1936 were 1,654 tons and in 1938 were 10,895 tons.

The principal changes in the Triple-A program for the current year are aimed definitely toward accomplishing more in the way of conservation. The most far-reaching change is in the revision of payment rates so as to encourage the use of desirable conservation practices which are normally not carried out on a large number of farms. To do this within the limits of available funds, it was necessary to decrease credits for seedings and other common conservation practices for which payments have been made in the past. Under another new provision, farmers on small farms can earn a minimum payment of $20. Still another provision permits any farmer to earn an additional $30 by planting a specified number of forest trees. These provisions are in the interest of broadening the program to include those with small farms and to enlist still larger numbers in active conservation practices.

Farm Security Program

While not affecting as large number of people as are involved in some of the other programs, the activities carried on under the Farm Security Administration have a very definite purpose. They are designed specifically to aid farm families which cannot secure the kind of assistance they need from any other sources. The scope and extent of accomplishments in this field are not as well known and appreciated as they should be.

One of the earliest types of effort carried on in this line was the so-called debt adjustment activity, in which it was the aim to find a

way out for those who were so hopelessly involved in debt that they could not extricate themselves without help. Briefly, the method followed was to seek a mutual agreement between debtors and creditors, which seemed to the best interests of both in view of the conditions in each individual case.

Between 1935 and 1939, inclusive, more than 1,000 cases have been handled, involving an original indebtedness of nearly four million dollars. By mutual agreement, this indebtedness was reduced more than one million dollars.

Another phase of work carried on by this agency consists of making loans to farm families to enable them to continue as self-supporting units, when they cannot obtain such assistance elsewhere. In extreme cases, outright grants of aid are made. Since this agency was started in 1935, some 1,700 families in Maryland have been aided by loans and grants amounting to more than $533,000.

Starting a little more than two years ago, this agency launched an attack upon the farm tenancy problem in the form of helping worthy tenants to become owners of farms of their own. During the first year of this program it operated in only one Maryland county and the allocation of funds to this State amounted to $41,100. Six tenants in Queen Anne's County were given the assistance necessary to place them on farms as owners. With $105,539 available the second year, the program was extended to three other counties and 19 more tenants were established as owners. The allocation for the current year is $180,307, and the program is being carried out in eight counties. Tentative allocation of the funds to the several counties has been made and it is estimated that in the neighborhood of 36 farms may be purchased.

Rural Electrification

Actual accomplishments in bringing the benefits of electric power to farms in Maryland through the aid of the Rural Electrification Administration are concentrated in two areas. In Southern Maryland the Tri-County Cooperative has 279 miles of line for 988 members. The Choptank Cooperative on the Eastern Shore has 267 miles of line for 733 members. These cooperatives were made possible through allotments by the Rural Electrification Administration amounting to $748,000. Other localities in the State are interested and in some the necessary petitions have been signed with a view to forming cooperative electrical associations.

Purchase of Surplus Commodities

In its program of buying to reduce surpluses that are burdening the market, the Federal Surplus Commodities Corporation has bought more than one and a half million dollars worth of Maryland farm products in the last seven years. Such commodities, as you know, are distributed to families on relief. Hogs, pork products, white potatoes, sweet potatoes, apples, dry skimmed milk, evaporated milk, eggs, fish, canned peas, and white flour are the commodities that have been purchased.

Another phase of this program, or a program very closely associated

with it, was launched in a somewhat experimental way about a year and a half ago. Apparently, it is proving satisfactory, at least to the extent that it is being extended from time to time. I refer to the so-called "Stamp Plan" of distributing certain commodities to persons receiving public aid. Under this plan, the commodities are distributed through the normal wholesale and retail food channels. The aim of the plan is to give low-income families who are eligible for public assistance additional purchasing power that can be used to obtain only surplus agricultural commodities in addition to their usual food purchases. This purchasing power is provided in the form of stamps, redeemable by the Government and acceptable in grocery stores and similar regular food outlets, in exchange for certain food products officially designated as surplus commodities.

The Stamp Plan has proved popular with food distributors and is now in operation in communities from coast to coast and from North to South. One or two cities has been added to the list each week since last fall. Most of the cities included are of medium size, but such large cities as Los Angeles and Pittsburgh have been placed on the list in recent weeks. It seems to me that this plan has demonstrated its merit to the extent that the advisability and possibility of having it extended to Baltimore City might well be carefully considered.

Soil Conservation Service

I have intentionally left until near the end my comments on one phase of the conservation program in which I feel that outstanding progress has been made. The results cannot be expressed in dollars, as can be done with some programs, but I am convinced that in ultimate value they rank among the greatest accomplishments in behalf of Maryland agriculture and the welfare of Maryland people.

Soil erosion has been taking its toll of Maryland farms for years. In sections where gullies are formed, the people soon become aware of the loss that is taking place, but in our State there is a comparatively small amount of gully erosion. The loss suffered from erosion by Maryland farmers is of a more insidious character. It is known as sheet erosion and takes place so gradually—a little of the top soil being carried away with each rain—that its real seriousness is not appreciated.

By means of extensive demonstration areas in different sections of the State, together with educational efforts, a large percentage of land owners and operators have been made aware of the situation with respect to loss by soil erosion and are interested in sound and practical steps to prevent and control it. With this understanding of the problem and its scope, there came the realization that it could not be handled adequately by farmers acting as individuals—that the elements causing soil erosion do not respect the boundary lines of individual farms.

In order to provide a means whereby farmers in any area could proceed in an organized way to protect their soils against erosion, a law—known as the "Soil Conservation Districts Law"—was enacted by the Maryland Legislature in 1937.

This law provides for a State Soil Conservation Committee, and specifies the procedure whereby the occupiers of land in a given area may organize themselves into a Soil Conservation District. When a district is formed, the work consists of formulating and carrying out a soil conservation and land use program that the farmers draw up and which they direct through a board of supervisors elected and appointed from farmers within the district. It is provided also that organized districts can obtain the assistance available from the Federal Soil Conservation Service and from State agencies.

Time does not permit giving details regarding this law and procedure and I can only say that Maryland farmers have taken advantage of it very promptly. Five districts, comprising more than one-fifth of the total land area of the State have been formed to date. The oldest conservation district in Maryland includes all the agricultural lands in Kent County and has been operating for more than a year. During the year the following districts have been formed: The Catoctin District in the Middletown Valley; The Gunpowder-Deer Creek District, which includes the agricultural lands of Baltimore and Harford Counties; the Monocacy District, embracing agricultural lands draining into the Monocacy River, or its tributaries, in Carroll and Frederick Counties; and a district including all of Washington County.

Land Use Planning

Although I have spoken of the various programs, perhaps the most significant progress has been in their coordination into one broad program, with the necessary adaptations to meet the needs of the different areas in the State. The foundation for work in this line was laid in 1938, and to some extent in previous years, but it assumed well-organized form at the beginning of 1939.

Briefly stated, agricultural land use planning in Maryland is progressing along six main fronts, although the activities touch on a wide variety of problems. The approaches include:

1. Cooperation in the development of programs and work plans for control and prevention of soil erosion in the newly created soil conservation districts.
2. A farm forestry plan for Maryland.
3. Farm Drainage.
4. Investigation relating to land classification, production and market price opportunities for fruits and vegetables in the Lower Eastern Shore area, and a survey of rural communities in Washington County.
5. Recommendations for improvement in the agricultural conservation program.
6. Development of intensive and unified agricultural land use plans in selected counties.

A State Land Use Planning Committee was organized a year ago last fall, and similar committees have been formed in each county. During the coming year, agricultural land use planning work will be conducted in ten counties. In these counties the committees will make a rather

careful inventory of their land resources and develop recommendations for the solution of their major agricultural and home problems.

A unified agricultural land use program will be developed in four counties, and the other nine counties will conduct land use planning work largely of an educational nature as a prelude to more intensive work.

As a result of the attention focused on this important, long-time project, farm people of all classes and ages are devoting their efforts to working out the best programs for their industry and their mode of life in a way that promises great development in the future. Out of their sound judgment and combined opinions, we may confidently expect the development of programs best adapted to the widely varied conditions existing in local areas of Maryland, and, based on these local and county programs, a sounder and more comprehensive program for Maryland agriculture and rural life than we have ever had before.

Cooperative Program

Substantial progress has been made in our cooperative program throughout the State. The activity of our Farm Bureau Co-op, the Southern States Co-op and Commodity Co-ops, such as the Dairymen's Association, the R. E. A. Co-ops, egg auctions and plans underway for the better sale of truck crops is very encouraging.

We must continue to emphasize cooperative marketing and study our distribution system with the view of reducing its present costs.

Conclusion

There are other programs affecting farm people, some of them of great value, that I have not been able to mention. There is the crop insurance program, for example, from which a number of farmers received benefits during the past year. A start is being made in a farm forestry program under the Norris-Doxey Act, and there are others of more or less far-reaching scope.

In all, the Extension Service Specialists and County Extension Agents, together with the farm organizations, are intimately involved. To say that our Extension forces are over-crowded is putting it mildly. I trust that ways and means may be found to help them with additional personnel, as well as operating expenses. I wish that some of the Government finances provided for the so-called action programs could be properly diverted to Extension, which is carrying the heaviest load in all of the field programs.

In finally answering the question in the title of these remarks, it is fair to say that we are making substantial progress all along the line. Our farmers are cooperating and we look forward to the future with confidence.

MR. JONES: Thank you, Dr. Symons:

Is Dr. DeVault present?

We would like a few words from you, if you will be kind enough.

DR. DEVAULT: Friends of the Maryland Farm Bureau, I would like to mention that in the next month or two, you will be given an oppor-

tunity to make what may perhaps be your greatest contribution to American agriculture in 1940. I was appointed about a year ago by the Secretary of Commerce to serve as Chairman of the Census Committee on Agriculture for 1940. We have prepared schedules which have been printed, and if those are filled out properly it will give us a complete inventory of the farm business. Now, what I would like to say to you this morning is this,—when the census taker comes around on April 1st, or shortly thereafter, please give him as accurate information as you can about the farm business. He will ask you questions about acreage of your land, about your livestock, values of livestock, production of crops, farm expense generally, and income, etc. Now, the census has nothing whatever to do with taxation. I used to work with the Census Bureau and they want this information, but it is not available to anyone else who wishes to get it. It will not be used to increase your taxes. We only want an inventory of the farm situation throughout the country generally, and that will be of great value, as Dr. Symons will tell you. I want to stress particularly that that information will not be used to raise your taxes, so please treat the matter seriously and give all the information you can when the census man asks for it.

The morning session then recessed at 12:15.

AFTERNOON SESSION

Songs led by Mr. W. R. McKnight.

MR. TURNER: Ladies and gentlemen, this morning we had as our presiding officer one of the charter members of the Farm Bureau who had served his county as president for the past twenty years, and this afternoon we likewise will have presiding at the meeting a charter member, a man who has been president of the Cecil County Farm Bureau for the last twenty years. He is a conservative man, a man of few words. Let us imagine the Farm Bureau as a watch with a balance spring to make it run. In our charter member who will preside this afternoon we have a man who has been the balance wheel of the Maryland Farm Bureau. He and his wife went to Chicago with us to the annual convention and they added dignity to our gathering. It is now my pleasure to present to you Mr. D. B. McDowell who will preside over this meeting.

MR. MCDOWELL: I am glad to see so many here. I hope you will enjoy the meeting.

At this time the presentation of the County honor awards and F. F. A. medals took place.

COUNTIES RECEIVING CERTIFICATES OF AWARD GIVEN BY MARYLAND FARM BUREAU, INC.

Baltimore County, Caroline County, Calvert County, Cecil County, Carroll County, Frederick County, Montgomery County, Kent County, Queen Anne's County, Somerset County, Talbot County, Washington County, Wicomico County, Garrett County.

LIST OF WINNERS
in the
MARYLAND FARM BUREAU—F. F. A. PROJECT CONTEST
1938-1939

(Awards made at State Farm Bureau Meeting—Lord Baltimore Hotel Thursday, January 11, 1940 at 1.30 P. M.)

Project	Rank	Winner	Teacher	High School	Medal
Miscell. Livestock:	First	Tom Seibel	Sydney T. Lawler	Sherwood	Gold
	Second	John Guard	Charles B. Miller	Friendsville	Silver
	Third	William J. Hines, Jr.	Sydney T. Lawler	Sherwood	Bronze
Miscell. Truck:	First	Robert Williams	Otis S. Twilley	Wicomico	Gold
	Second	Eugene C. Smith	Manville E. Coblentz	Boonsboro	Silver
	Third	Eugene M. Coddington	Charley B. Miller	Friendsville	Bronze
Miscell. Crops:	First	Francis J. Schultz	T. C. Martin	Hughesville	Gold
	Second	Maurice C. King	Donald E. Watkins	Damascus	Silver
	Third	Everett McClintock	Marvin G. Callis	Accident	Bronze
Sweet Corn:	First	Walter M. Brown, Jr.	Sydney T. Lawler	Sherwood	Gold
	Second	Edgar L. Myers	Harold A. Remsberg	Smithsburg	Silver
	Third	Joe Peter, Jr.	Sydney T. Lawler	Sherwood	Bronze
Corn:	First	Carroll M. Zentz	Robert K. Remsberg	Thurmont	Gold
	Second	William J. Hines, Jr.	Sydney T. Lawler	Sherwood	Silver
	Third	Robert S. Delauder	J. Homer Remsberg	Middletown	Bronze

Project	Rank	Winner	Teacher	High School	Medal
Potato:	First	Wilbur Thomas	Charley B. Miller	Friendsville	Gold
	Second	Calvin Harvey	O. T. Graser	Oakland	Silver
	Third	Robert Miller	Marvin G. Callis	Accident	Bronze
Tomato:	First	Virgil Robinson	Gerald A. Biggs	Federalsburg	Gold
	Second	Lawrence Everngam	Gerald A. Biggs	Federalsburg	Silver
Tobacco:	First	Grady Bragg	T. C. Martin	Hughesville	Gold
	Second	Edward Smith	T. C. Martin	Hughesville	Silver
	Third	Birchley Dyson	T. C. Martin	Hughesville	Bronze
Poultry:	First	Donald W. Fulton	Frank R. McFarland	Poolesville	Gold
	Second	Robert Glotfelty	William E. Tarbell	Grantsville	Silver
	Third	Daniel Klotz	William E. Tarbell	Grantsville	Bronze
Swine:	First	Walter N. Billingsley	Harry McDonald	Sparks	Gold
	Second	William W. Martin	Edward F. Holter	Frederick	Silver
	Third	William Thomas	Charley B. Miller	Friendsville	Bronze
Dairy:	First	Josh Ensor	Harry McDonald	Sparks	Gold
	Second	Austin B. Coblentz	J. Homer Remsberg	Middletown	Silver
	Third	C. Richard Ahalt	J. Homer Remsberg	Middletown	Bronze
Diversified Farming:	First	Francis J. Schultz	T. C. Martin	Hughesville	Gold
	Second	Guy Krom	Robert K. Remsberg	Emmitsburg	Silver
	Third	Joe Peter, Jr.	Sydney T. Lawler	Sherwood	Bronze

MR. MCDOWELL: The next on the program is the report of the Credentials Committee by Mr. Samuel Linton, Chairman.

Mr. Linton gave the Credentials report.

REPORT OF CREDIENTIALS COMMITTEE—1939
MARYLAND FARM BUREAU, INC.

County	Paid-Up Members	Number of Directors	Number of Delegates
Allegany	50	1	1
Anne Arundel	103	1	2
Baltimore	417	1	8
Calvert	129	1	3
Caroline	206	1	4
Carroll	258	1	5
Cecil	106	1	2
Charles	181	1	4
Dorchester	89	1	2
Frederick	612	1	12
Garrett	83	1	2
Harford	379	1	8
Howard	81	1	2
Kent	216	1	4
Montgomery	288	1	6
Prince George's	224	1	4
Queen Anne's	204	1	4
St. Mary's	78	1	2
Somerset	180	1	4
Talbot	130	1	3
Washington	172	1	3
Wicomico	213	1	4
Worcester	78	1	2

	Number of Directors	Number of Delegates
Associated Women of Md. Farm Bureau, Inc.	2	6
Maryland Stockmen's Association	1	1
Maryland State Horticulture Society	1	1
Maryland State Poultry Council	1	1
Maryland Cooperative Milk Producers Association	1	3
Maryland Tobacco Growers Association	1	3
Hillsboro-Queen Anne Corporation	1	1

Maryland Vegetable Growers Association	1	1
Maryland State Beekeepers Association	1	1
Maryland Crop Improvement Association	1	1
Maryland State Horsebreeders' Association	1	1
Maryland Ayshire Breeders' Association	1	1

Respectfully submitted,

SAMUEL LINTON, *Chairman*
EARLE KEENE
JOHN S. BUSHEY
WILLARD EVANS
JAMES D. KING
R. C. WILSON.

MR. MCDOWELL: From what Mr. Linton told you, you will understand that it is a big organization. I believe we are going to have a talk from somebody now who knows something of the Chinese situation. I am going to ask Mr. Wise to introduce him.

MR. WISE: The Chinese-Japanese situation presents a problem which affects our own country very much. We are very glad to have the opportunity of hearing from a man who is thoroughly posted on it. Mr. Owen Lattimore is a director of the Hines School of International Law at Johns Hopkins University. He writes and speaks numerous languages, and he understands this situation, and we are glad to hear from him.

MR. LATTIMORE: Ladies and gentlemen. Coming in the door of the hotel, the first thing I saw was a big poster of the Japanese beetle. Now, I do not want you to think I am talking of that. It is an entirely different kind of Japanese control that I want to talk to you about. I have lived there many years, most of my life. I am not going to talk to you because of a sympathetic feeling for China as a peaceful nation, but I want to speak to you as an American citizen interested in American people and their welfare. I am going to give you an example of what I mean. A few months ago an American tool steel concern was sold to the Japanese government,—the whole thing, lock, stock and barrel. A friend of mine who had done missionary work in the far East and who knew Japan as well as China, was called on by a man who had gone out to Japan to train the Japanese. This man said to him that while in Japan he got very good pay, but in the meantime his son who had worked in the factory was without a job, and, when he came back from Japan, he would be out of a job. Now, if that factory were delivered to Japan to help the Japanese improve their standard of living, that would be very good, things would adjust themselves. Trade as a whole might improve, and the Americans out of jobs could get other jobs; everything would be going up. But it does not work that way. Japan today has been in Manchuria for eight or nine years, and in that time the standard of living of all the Manchurians has gone down.

At the same time, the Japanese-Manchurian trade with America has gone up, they are buying more of our things, but they are using what they buy from us for purposes of war only, for the purpose of increasing the Japanese Empire. That means that the 30,000,000 of Japanese are producing more and more things to be used in warfare, and it does not raise the standard of living in Manchuria; it helps the Japanese to conquer the Manchurians and put them to work, and in the end instead of increasing the use of American-made goods, it will decrease.

Whatever we sell to Japan, it will help to put people out of jobs. In the course of this war with China America has been supplying Japan with 54% of all the war materials that Japan uses, and a lot of that is going into the creation of new Japanese industries which are used for war, cannot be used for peaceful purposes. We are helping Japan not merely to conquer China, but we are cutting down American markets to put Americans out of jobs. To help make a world, in brief, in which Americans and people elsewhere in the world consume less American products of all kinds, including farm products, shrinks the American market and the whole world market.

Some people are afraid that even if the Chinese win they would only become a bigger Japan, a more dangerous Japan, with the same standard of living that all Asia had—cheap labor. I know that China after this war will be bled white. The Chinese in order to stave off intervention and civil war, have got to work quickly to raise the standard of living of the Chinese people, to increase the number of things they use, making them consumers of more things, and that is worth a man's fight to be a democratic citizen of a great republic. It is our task to work for consummation of the Chinese market, to help them to raise their standard of living. Our trade treaty with Japan is being abrogated on January 26th. We are the people who elect the Congressmen, our representatives in Congress and our own President, and we should all write to our representatives to ask them to stop America from furnishing Japan, not only with bombs and ammunition, but with the raw materials that they can make into ammunition for war. They will know how to do that best, leave it to them, that is their job, they are our political representatives. We can say to them that we do not want Japan to go on using 50% and more of its supplies to slaughter our consumers in China as well as our friends there in the east. Since the Boxer war, they have been our friends, their whole ambition has been to build friendship with Americans both there and on our side of the Ocean.

MR. MCDOWELL: I am sure the gentleman gave us a very instructive talk and I want to thank him.

The next speaker is a man I do not know anything about, so I will ask Mr. Turner to introduce him.

MR. TURNER: Ladies and gentlemen, I will simply say that the next speaker, a minister from Baltimore County, has had many calls, good calls to large cities, but he prefers to live amongst country people. He can speak for himself though, Rev. William C. Roberts, of St. James Church.

FARMERS AND DEMOCRACY

REVEREND WILLIAM C. ROBERTS

For some reason or other, it looks as though a superman or a God has taken a strong cord and tied us all together in this year of 1940. That, I should say, is not only something new, but something past believing. Over the roof that covers my study there flies an airplane every morning at nine, which connects north and south by a few hours, and over other studies there fly the airplanes that connect England with Germany, Finland with Russia, and China with Japan.

In this new world the farmer becomes both a citizen of America and a citizen of the world, and what happens in the world at large and to the world at large affects both the life of the farmer and the existence of Democracy.

For example, the Reciprocal Trade Agreements between the United States and the Argentine collapsed last week, those between the United States and Uruguay collapsed this week, and the reason most likely was due to a clash of agricultural interests in these three great countries, and the pressure the agricultural interests brought to bear in these three democracies.

The farmer in the United States is, therefore, involved in three kinds of politics,—in County politics; in National politics, and in international politics, and whatever happens in the world today affects the farm tomorrow.

The aim of this address will be to point out and underscore three major ways in which the farmer in a democracy has been affected by or affects the world at large, and in order to be frank, I must admit at the very start that anything I shall say you already know; that in almost every sermon I give I am forced to repeat what somebody else has said, time and time again, but in these serious days one only repeats what is of vital and frightful importance.

I.

If you would read history with a scense of perspective, you would notice how one period of conservatism is followed by a period of radicalism, how one period of individualism is followed by a period of collectivism; how one period of atheism is followed by a period of religion; how one period of security is followed by a period of insecurity.

The characteristic of the period we are living in is "change" and most of us cannot keep up with the speed with which the changes occur, hence we are living in a Nervous Age. We may not like this kind of a world or this kind of an age.

When Florence Nightingale was nursing some soldiers at the front who had pneumonia, a couple of aristocratic ladies were on a tour and, when they came to the outfit and saw how sick the men were, one lady said: "My, Miss Nightingale, the night air isn't very good for those

sick men!" and Miss Nightingale replied, "True, the night air is not good for them, but it's the only kind of air we have at night out here."

Now, this present era of change may not be so good, but it's the only kind we have at this particular time in history, and it remains true that everything is changing.

We know that Russia has changed, and since that has occurred, Labor has become self-conscious and is on the march everywhere.. Labor and the Jews helped to cause Germany to lose the last war. Labor troubles sooner or later may help to decide whether or not the Allies will win this war. The one thing more than any other that Germany is hoping today is the use of labor disputes in England and France to curtail the food supply.

This is an economic war and this is the first world war where organized labor will have so much to say,—and that is new!

We know the corner grocery store has changed. Instead of seeing the owner face to face, we see a clerk in uniform chained to a chain store by means of wages and hours.

We know the speed in which we go to and from home has changed.

We know the tax-rate has changed.

We know it's harder for us to keep up with the Joneses who live next door than it was for our grandparents.

We know a lot less and care a lot less about our neighbors than did our grandparents.

We know the country school has changed and along with it the farm youth.

But, with the changes, we must be honest, for we know the farmer in a Democracy is a beneficiary of many of these radical changes.

New Roads are good.

News ways of lighting and heating and running engines in the house, the barn and chicken house are good.

The telephone and radio are good.

More honest men in politics is good.

More countrymen in farm organizations is good.

Cooperative farm organizations are good.

The Government's interest in the farm through the Department of Agriculture, Universities and County agents is good.

The consolidated schools are good.

Add these all up and the farmer has reason to give thanks for much in a decade of change.

For example: A Menonite farmer continued to ignore rules about shipping milk for years. One day he went down to the station and saw a red tag on his cans and he swore out loud. Swearing is against the rules of his church, and some of the members of the congregation heard him curse, and they had a meeting that night and threw him out of the church. Now, here was a man, and a group of men who knew that dirt in milk meant disease in the intestines of babies, but he didn't care about that; he did care for his own reputation, in the neighborhood and when

he saw the red tag, he swore, and swearing was against the rules of the church and the church only saw the wrong that he said and not the wrong that he did. But he was guilty of a greater sin,—of not keeping up with changes that were for good, and not playing the game according to the rules.

We are living in a world of change. That's true not only of the world, but of the farmer.

II.

There is another factor in a farmer's life that defies the world of change, and it has been something which is as essential to the world's welfare as the food he supplies. That something was just as important in the days of Abraham, Isaac and Jacob, some 5,000 years ago, when they farmed and tilled the land, as it is to the farmer today. You can't buy it, and you can't sell it. You can only describe it by seeing it in the farmer's daily life. It's called Personal Responsibility, and it's just the opposite of what we mean by living like parasites, profiting without producing, and passing the buck.

God gave the land, the seed and the seasons, and America is just about as near to the Promised Land that Abraham, Isaac and Jacob were looking for as any other place in the whole earth. We have good soil, rich earth, and glorious climate, and I've heard it said, "God saved America to give mankind a second chance." Be that as it may, God never gives the land completely prepared, and God never keeps the land in number one condition. That's the personal responsibility of the farmer, and it is the hardest and yet the happiest kind of work God ever gave any man to do.

There is no such thing as a lazy farmer, for God takes his farm away. There is no such thing as a farmer who passes the buck,—it just disappears.

America was built by men and women who knew the meaning and importance of Personal Responsibility. It was not built by people who were primarily interested in getting something out of nothing. You seldom find crooks, or criminals, or breeding places for crime, or double-faced politicians or money-serving lawyers in rural communities.

America was built by men and women who knew that the soil on which they worked and lived was Holy Ground.

Now, unless the whole of America can learn the importance of this great elementary lesson of the farmer, the importance of personal responsibility, we are doomed for the dark ages as surely as night follows day.

III.

There is yet another way in which the farmer and the rural life definitely affect the Democracy of the nation and the world at large. If you would read history carefully, you would see how civilization commits suicide every so often. But it only commits suicide when civilization comes to mean city life exclusively,—devoid of the influence of the manners and the morals of country folk.

There is something about city life that gradually smothers the soul of a nation or its culture.

There is something about urban industry and crowded streets and tenement homes that crushes the bettter side of men, women and children. This something can best be described as a craze for control, a lust for power, an insane desire for expansion and aggression. You can see it in its stages in American Democracy.

First, it appears as Competition.

Then it develops its cut-throat competition.

Then it leads to undeclared war;

Then it develops into open warfare.

First it is between Farmers and Industrialists.

Then it is between Industrialists and Labor Unions.

Then it is between Industrialists and Industrialists.

Then it is between Labor Unions and Labor Unions.

When the business man or the politician gets control of the school, the army and the church you have a dictatorship.

Consider the situation in Germany after the World War. The farmers lost all power, they were not even a minority group. Then, the industrialists got to fighting with the Labor Unions, and the man on the street got so sick of it that he voted for a third party ticket and that ticket was Mr. Hitler and National Socialism.

We are all now living in this horrible period where millions are unemployed; millions are refugees crowding the roadways of the world; and 80% of the people are engaged in actual economic warfare.

When the farmer and the farmer's family, the farmer's God fail to be a dominant influence in city life, city life loses its soul and commits suicide.

This happened in Egypt, in Babylon, in Greece and in Rome and now we are all holding our breath, watching from the sidelines, Europe and Asia.

In our own country some of the greatest Americans fought to keep the influence of the farmer dominant. In 1770 Thomas Jefferson fought on behalf of the farmer against Burr and Hamilton.

In 1830 Jackson fought on behalf of the farmer against Adams.

In 1861 Lee fought on behalf of the farmer against Lincoln.

In 1896 William J. Bryan, a great man, fought for the farmer against Hanna.

The most outstanding men and women of our country have known that the only way you can preserve American Democracy is by keeping alive in the nation the influence of country manners and country morals. The city cannot maintain itself. Family life in the city is always falling below the quota of new life. It needs the country youth to maintain its population quota. In an article by H. L. Mencken in the Sun about the growth of the University of Maryland, I read with interest how the farmers manage to send more of their children to the High School than do the city people, and with our young country people there goes to the

city a fresh sense of right and wrong, a fresh crop of endurance and responsibility; a deepened sense of reverence and love. The outstanding leaders in all fields of American life were born and bred beyond the city limits. Not long ago I noticed the retirement of Miss Jane Adams, founder of the famous Hull House in Chicago, and the hundreds of others in the United States. She was born and raised and inspired in the Northwestern open spaces, amidst simple surroundings of country people.

Without the continued influence of the farmer American Democracy cannot exist.

MR. MCDOWELL: The next speaker is a lady. The two previous speakers I said I knew nothing about, and I will have to say I know less about her. She says she has not time to give the address on the subject on the program and she has changed it. I do not even know whether she is a single or a married woman. It just says Mary Sue Wigley, and I do not know whether to say Mrs. or Miss Wigley.

HOME-MADE CHARACTER

MARY SUE WIGLEY

The subject you have announced is the best I have, but it also happens to be the longest, and, as I will not have time to give it, I have selected "Homemade Character" instead, a talk not planned for farm people,—in the beginning for the City of Chicago, and it may be something that does not apply to you.

It is certainly good to get out of a city like New York, and meet people like you. I was not raised in the city, I lived down in the bad roads district in Alabama, not a single agent comes around, and they never heard of a tourist. Sand Mountain where I lived is one hundred miles long and twenty-five to forty miles across. When they took the census in 1930, they found there were only four colored people there and five foreign-born whites. We depend on growing cotton, soybeans, and things like that, but that is not quite as true today as it was yesterday, because we are in the T. V. A. country, and are beginning to have modern conveniences. In my childhood a man's labor-saving device was his wife.

I am not quite sure of my ground in Maryland. I have been told that the difference between a Southerner and a Yankee is that a Southerner sells what he cannot eat, and a Yankee eats when he cannot sell. I was down home all this past summer, I left the last of September, and the cotton fields were white then. It reminded me of the days of my childhood. Sometimes father would call that "The wind is coming from the East this morning," which meant we must get up extra early and be very busy. The wind from the East meant rain, and sometimes an hour or two before a rain picking cotton was worth a day or so other times. When the wind came from the East, we could hear the sound of the trains lumbering around the Lookout Mountain. Sometimes we could

hear an occasional steamboat. And so, instead of gathering cotton, I used to stop and listen to the messages that came from the outside world from the east wind years ago. I was anxious to take a teacher's course, and all through my college course I had to work hard. Mountain people are schooled to hard work. We do not change our ways just because we get an advantage over other persons.

It became my duty in 1932 and 1933 to make many addresses to thousands of people because the world in a mass was anxious about the future, so some of my time was spent in trying to get a cheerful message to people who thought they were poor, and I bared my soul to audiences as never before, and as a result I had many requests to talk more about life in my mountains, and that is the reason that I prepared this little talk, trying to point out some of our modern problems, and some of the more important things of life as we found them. I do not claim that those people in the mountains in Alabama were perfect, but I am not going to dwell on the faults of dear friends. They did the best they could with the equipment they had, and today they do the best they can with the problems of today. You might fall in love with that little valley on Sand Mountain. The only thing permanent about our roads is the location, that is because God made the gaps—we soon left the highway for improved roads. On top of Sand Mountain I have many a time searched for trailing arbutus near the banks of the creek, and stopped to sit there and listen to the call of the creek. In the spring the azaleas, the dogwood and beautiful flowers cover the hills at home, and cause you to raise your eyes to Heaven and commune with Nature. It has been my duty to live in large cities for the past few years, but I always try to spend some time down in my home mountains.

Much of the modern literature about that section has been written by authors who go down there and live a little while and they write, and most of that literature has been written to sell as colorful fiction, raising money for modern institutions and missions. If you have read it, you know a lot that is not true, it is not representative, much of it is really untrue. They are wonderful people down there, never too busy to visit the old and the sick and help the distressed. They would come for miles around to my father, and he would go to the last ditch for them, and sometimes cross that ditch with them, if they needed it. They are good neighbors down there.

The economic life is simple. Work and play are well balanced, the pleasures are very largely what they make for themselves. The people are noted for their generosity, and their hospitality. There is little hurry and worry, they find time to rest and get plenty of sleep. That is the best way to develop character, and rule out all danger of nerves. They still speak the old English language as Shakespeare spoke it in soft, gentle voices. They are particularly attached to their homes and families, divorces are extremely rare. The men are like the Pilgrim Fathers. The children are required to join in the family life,

and have their regular tasks at an early age. They have great respect for their parents and full confidence in them. I recall an incident when I was at the hospital and a small boy came out—his father was from Lookout Mountain. He told me of the accident the little boy had in which his finger was cut off, and the mother was screaming, the father said, and he ran to the house to see what was the matter. "The little boy came to me with his finger, and said 'I know you can put it on for me, Daddy.'" The man said, "I would have given anything if I could have just fixed that finger back." His voice broke. The little boy stood there, he watched and listened to his father, and he says, "Oh, pshaw, Daddy, I didn't really mean it."

Down in our mountain country we are not divided into economic classes. There are no shining lights that try to be exclusive because of some success in business. If they tried it, everybody at home would laugh at them, and say, "Those poor people are trying to put on airs." If a man goes away and comes back all snobbish, he is considered as rather weak-minded. It is nothing but common sense to be friendly with everybody at home. There is only one way to win honor on our mountains, and that is to be high-minded. A man may be poor and still be considered high-minded if he makes a living, saves a little, and is honest and good. People who are not that are considered low-minded. There is little stealing on our mountains, you do not even find the doors locked, people leave things on the sidewalks of the little towns. Our mountain people consider the laws proper and they obey them. They are not keen about the dog tax, nor about the new fish and game laws, but they are obeyed. There is one very unpopular law in our agricultural districts, at home, and that is the bankruptcy law. Law or no law, a man must pay his debts, or die trying, or he loses the highest esteem of his fellows. My father, when he failed in business as a country merchant, gave up our home and all he had to pay off the debts. It took more than fifteen years to pay off the debts and buy another home, but what's fifteen years where honor and security of a man are concerned? Our debts were met. We did not lose by it. We gained by it and are happy over it. That is a fact that everybody must receive satisfaction from. Character cannot grow as the effort is prolonged, it has got to be taught from the cradle to the grave, and nothing else is worth while. A good name is more valuable than gold and silver. I say that and I know it, although poverty is not an abstract term to me, I have known poverty and have had to give up things that I wanted, but I had a chance to go to college. I had to help pay the family debts. I have seen all our household goods sold because my father had not been able to meet his obligations.

There are worse things in this world than hard work. It is worse to want a job and not be able to find anything to do. Being a young person without proper vision is worse. The people at home are poor in material success. They do not expect to grow rich. A farm is not a place to grow wealthy, it is a place to work for the necessities of life.

They work because they like to work. My mother worked hard, as I said before, the greatest joy of her life still comes from the performance of a worth-while task. Work is one of the best things in life. It is better to get joy out of the work we do than out of play. People who work for reward, then spend what they make to please someone else, will build character.

The failures in life are not due so much to the lack of opportunity, or to the lack of intelligence, but to a lack of character when the test comes. I want to say that I have not read the book "Gone With The Wind." I do not like to read books about the Civil War. I heard all about it. I had an Aunt Susie who lived down in the mountains of Georgia with my old grandfather. He was away with the army. She used to tell me of the days when Sherman was marching through Georgia, and I can tell you she did not like that song. In order to get some potatoes they had to cross battle fields, and when they got them, the soldiers would come along and take them away from them. She started across one day and the potatoes were taken from her, and she went back the second time, and again they took the potatoes away from her, but a kind officer witnessed it and forced the soldiers to return the potatoes and helped her safely home, where she had left the baby in a cradle. When Grandfather got home from the war, he was unable to work, he had walked twenty miles to Rome, Georgia, and brought food home on his back. She worked in the field hard, but she was always laughing and jolly. Now, just to think of Aunt Susie has always seemed to send me on my way happier. It was good for me to know she marched on smiling. She cheerfully assumed responsibility for misfortune she did not create for herself, and that is a wonderful test of human character. Aunt Susie hated war, she believed men should make peace with everyone in the world, just as she did.

This brings me to something that I would like to say. I am going to tell a more personal incident, so personal it became a part of my whole existence for a long time. Times were bad for us the first year we lived on a farm. Mother was ill, father's arm was broken, the cow and the horse were mortgaged, and always the sound of approaching wheels might mean the man who held the mortgages coming to collect. But one morning I was standing watching the sun rise over Lookout Mountain, it was so beautiful I had a vision—I decided then and there what I wanted to do, I went back to the house and wrote it down. I wanted to study and teach to help get a home for my mother, to pay the debts due by my father, I wanted to go to college. About twenty years later, all that dream had come true, the last goal was reached in the spring of 1931.

What do you count as blessings? I would name the God-given ability for honest work. In our section, the youth do not depend on their parents for anything like all the things they want, they try to get for themselves what they want. This country offers justice and opportunity to all, thank Heaven nobody is running around in my hills telling us

otherwise. Now, if you do not know what I have been talking about, I am sorry. I have been trying to tell you some of the advantages and disadvantages of a simple scale of living, where you may combine the rich heritage of the past with all the best of the present. You have time for music and art and literature and the better things of life, time for leisure and rest, a wonderful opportunity to discover and develop your own talents, gives you more power, more soul, you have a good chance to be yourself. If you do not already have a home, I hope you have time some day to have one without a mortgage. I hope you will have an adequate income to insure peace and security. I love my own home better because it was there that I first believed in justice and opportunity of effort to all by my own country. Just so far as God creates men equal mentally, and we are high-minded, with an opportunity to study, to work, to cooperate, I shall never cease to give thanks, and also that such a country like these United States is my home. I have been in the north, the east, the south and the west, and they are all good places to live. I find good people everywhere, but, friends, I am going to say something now in closing, and I believe you will agree with me. Some day after I have finished my present work, I am going to go back home to my own home and I am going to stay in this good old world there just as long as I can. You may have your own life planned out; if so, when you come to the hard places, as we all must, I hope you will learn, as you struggle on, that if you love enough, if you plan enough, hard work is not the worst but the best thing that can happen for you and for all men, and I hope you will take the right steps that will hold you to your cause.

MR. MCDOWELL: I am sure you all enjoyed the lady's talk. Now, I have the honor this time that I never expected to have, and that is to introduce the President of the American Farm Bureau, Mr. Edward O'Neal.

ADDRESS

EDWARD A. O'NEAL

President, American Farm Bureau Federation

Thank you, Mr. Chairman, ladies and gentlemen of the Maryland Farm Bureau, south of the Mason and Dixon Line.

It was a great delight to me to get in just in time to hear a fellow Alabamian talk to you. I have known of Miss Mary Sue for many years. She helped to organize the mountain people for the Farm Bureau, and she did good work talking to the farmers living in that beautiful country. That was a beautiful picture she painted of a farmer's life among those good people. That is one of the best things about America, in every section we find these wonderful characteristics. The great State of Alabama is one of the most beautiful. The first time I saw it, I was amazed—I come from farther west in Tennessee. I went up there with a county agent. We had one of those old tin

Lizzies; we finally got up the hill, but that old Lizzie was always out of gas, and I did not think we would make it with that thing, but when we reached the top of the hill I jumped out, did not wait hardly to open the door. I leaped out of the car and went to the well for a drink. I thought I was going to have a job on my hands to draw up the bucket, but much to my surprise I hit water about eight feet below the ground. That trip was a liberal education to me. I want to say to you again that this is one of the most attractive sections of America. Scientific agriculture has done much for those farmers. They used to say, long before Miss Mary Sue came along, you could buy land down there for $1.50 an acre, but now if you try to buy it you will think you are buying on one of the best streets in Baltimore. Those people down there love their homes, and it is a type of soil that produces marvelously, even when it rains too much or is too dry. She described the characteristics of the people. I will have to tell you a little story of a distinguished Alabama man. There are great people down there—Speaker Bankhead came from there and he went back home among the farm people, and one of his old friends came up, held out his hand, and said, "I am certainly glad to see you. Where have you been? I did not know you had been away from home." He had been gone just twenty years!

Another story about the home life—I remember visiting frequently in the home of one of our Presidents, a German—it was a settlement of Germans who came over in the early 70's. There were about twelve or fourteen hundred of them, and 90% of the farmers in the membership of the Farm Bureau. I always enjoyed visiting him. He was always very hospitable, enjoyed the things of this life; he certainly lived well. Well, he lost his wife, and I went over to sympathize with him. I said, "I am sorry you lost your wife; you must miss her a good deal," And this fine old fellow said, "She was just a little too light for the work."

Well, that is one of the things of America, like she described. You find those fine characteristics in the people all over the United States, wherever you go. I was out in Kansas this summer. It had not rained at all, but they did not complain much about it. I said, "What do you do? You don't smoke, you don't chew, you don't drink—what do you do?" They said, "That's all right; we do what we want to do."

Now, I came over here today from Washington. We have been over there holding a meeting of the Executive Committee of the Farm Bureau Federation for the last three days, in which time we tried to make up our program to present to the President of the United States, the conditional program of the American Farm Bureau Federation for 1940. I left the Executive Committee, having lunch with Secretary Wallace. The President said on this occasion of "Our Annual Convention," that is what he called it when we talked over the program with him, and when the discussion was over I asked him, "How do you think we can carry out this program?" He said, "I think we can go on pretty good with it." As you know, to carry out a program, even

in a state or in a nation where you are speaking for thirty-nine or forty States, is no small job. Farm people must not forget that we are a small proportion of the entire citizenship of the United States.

Many of you were at the convention this year in Chicago, and heard the speakers, and heard the discussions. You heard the resolutions for the National program. I think you all got quite a thrill out of it. I did. To look back over twenty years and hear what the men who were charged with the responsibility of the organization in the years gone by had in mind, their various experiences for ten years, a decade after the first world war, and another decade in which there was a serious test of our program, another decade to get ready, it seems, to have another terrible world war number two, but as you look over those twenty years and check up with the progress that has been made in agriculture in America as a whole, the accomplishments are perfectly remarkable. I know all my friends in Alabama think so, just as Miss Mary Sue said.

I was happy as a cotton farmer—they made me a Doctor of Agriculture. I don't know what that means, but that is what they said. They gave me a degree and they pinned a gold medal on me. I found I could produce cotton and other products in abundance, I could not eat it all, could not drink it up, could not chew it up. I found a surplus as other ten million people in the cotton fields found. I was not by myself, and as many of you have heard before, I decided that my neighbor was what I needed most. I needed him more than anything else, and that neighbor was the man who lived on a farm, not only in the cotton farms of the south, where ten million of them are—a third of the farms down there—but the fellow that raised potatoes in Maine, or oranges in California, was my neighbor, and I decided to dedicate my life to try and bring unity amongst American agriculture. That is a very difficult thing to do, and I was delighted to see at the annual meeting that the cotton farmer had decided that he could not do things by himself, and the wheat farmer by himself, or the truck farmer by himself, and it now begins to look as if we might realize our dream, and succeed in this great nation to get the men who raise food, livestock, horses, cattle and sheep, have milk, dairy cows, or raise tobacco, that we could get all of them into these forty-eight great State institutions and we could coordinate their efforts, that we would all work together and form a plan to try to enable the purchaser to cooperate with the consumer for the good of all. In other words, the program of American agriculture is national and I might say international in more ways than you may think. We have always said in the American Farm Bureau Federation, what can we do with the surplus? We cannot eat it up, we cannot always give it away. One of my friends raised wonderful apples in Michigan, and what can he get for them? Fifteen cents a bushel. In Alabama those apples would cost much more; they cannot walk six hundred miles to get them. We must remember that there are fixed charges in transportation that we must recognize. I

know in the days of my cotton farming, there was always a surplus of cotton—many people gave the cotton away. By the way, Mr. President, a lot of your dealers are not quite so liberal with your products. I had to go to the big cities to find that out. We have got enough money now to spend on relief, lots of money for relief, lots of money to spend to feed these fellows. Everybody needs cotton now, the cotton business has improved. The ladies now are using much more in cotton goods. That is the way to do good business. Let's be ready for it, let's see what you are doing to cooperate. You raise produce that costs twenty cents, and it costs eighty cents to get it in shape to use. On the farm it costs little, but to get it to the real market costs so much more.

But I must hurry on. Today I want to give you some of the program we presented to the President.

To the President of the United States and the Members of the 76th Congress:

Pursuant to resolutions adopted by the House of Voting Delegates at the 21st annual meeting of the American Farm Bureau Federation, the Board of Directors herewith recommends to the serious attention of the President of the United States and the members of the 76th Congress the following matters, which are considered of grave national importance, and of especial concern to American agriculture:

I. National Defense

Consistent with the responsibilities of a great Christian nation, our country must maintain peace. Military and naval armaments adequate to meet the reasonable requirements of national defense must be maintained, but armament expenditures in excess of these requirements cannot be justified.

II. Farm Parity and National Recovery

Approached from every angle, the results of the provisions of federal law for soil conservation and crop adjustment, to the extent that appropriations therefore have been available, have been effective. Commodity loans, which guarantee the public an adequate reserve supply of food and fiber at fair prices, have given substantial support to the price structure of the basic crops; marketing agreements provisions, to the extent that same have been utilized by producers of the non-basic crops, justify the continuance and expansion of this part of the national farm program. Farm prices, however, have not by any means reached parity levels. Parity prices alone can restore farm purchasing power, and farm purchasing power is the most important factor in increasing national income. To effect the primary purpose of the Agricultural Adjustment Act, which is to restore and maintain parity position, it is essential that adequate appropriations be made available in 1940 to provide for parity payments sufficient to bridge completely the gap between farm market prices and parity.

III. International Trade

International trade and good will have been promoted as a result of the Reciprocal Trade Agreements program. These agreements have proved helpful rather than hurtful to agriculture. The Trade Agreements Act should be extended for another three-year period, but all agreements should receive the unanimous approval of the Secretaries of State, Agriculture and Commerce. No agreement with respect to any agricultural commodity should be consummated which will have the effect of forcing or holding the price of such commodity below parity price.

IV. Farm Credit Administration

For twenty-five years farmers have struggled to build up a sound, effective, permanent and independent farm credit system, including the Federal Land Banks, the Intermediate Credit Banks, the Banks for Cooperatives, and the Production Credit System. The ultimate objective is complete farmer ownership and farmer control.

This objective, we believe, can best be achieved by placing complete administrative responsibility in the hands of a Board of Governors, as an independent government agency, members to be appointed by the President of the United States and confirmed by the Senate, with terms of members so staggered as to insure continuity of administration.

The Federation will aggressively support legislation directed toward this objective.

V. Monetary Problems

Since the nation's monetary policies are of primary concern to every citizen, the Banking and Currency Committee of the Senate, set up to study monetary problems and policies and their effect upon commodity price levels, should begin its study at an early date, so that its findings may be made available to the public as soon as possible.

VI. Transportation

In the final draft of legislation on the subject of transportation, the inherent advantages peculiar to the railroads, water carriers, and motor vehicles as modes of public transportation must be preserved, both as to the fundamental law and in its administration.

A reasonable time for study and appraisal of the bill agreed upon by the conferees should be allowed before the House and Senate consider the conference bill.

VII. Illegal Restraints

The Department of Justice and the Federal Trade Commission, in their efforts to enforce the anti-trust laws against unlawful restraints, illegal monopolies and practices, whether fostered by industry, labor or agriculture, have the approval and support of the Federation. Congress should further strengthen the anti-trust laws.

VIII. Labor Legislation

The National Labor Relations Act should require the submission of all labor disputes affecting industries engaged in handling perishable and semi-perishable agricultural commodities to arbitration. Agricultural labor in this Act should be defined as set forth in the Logan-Lee Bills.

The Fair Labor Standards Act (wages and hours law), as it relates to clarification of exemptions concerning area of production and seasonal and perishable commodities, should be amended along the lines set forth in the Miller-Barden Bills.

IX. Conservation

In conservation activities, greater emphasis should be laid on farm forestry, forestry research, the development of recreational areas, fire and disease control, and the acquisition of submarginal farm land by Federal and State Governments for forestry purposes.

All functions of the Federal Government relating to plant and animal life should be retained in or returned to the Department of Agriculture.

X. Research Activity

Much effort and expenditure has been made in the past in research into agricultural problems, both technical and economic. The establishment of regional research laboratories gives evidence of the continuance of this sound policy. It is not a solution of economic maladjustments, however, and should not be so regarded.

Support will be given by the Federation to the promotion of continued efforts to discover new facts, new uses and new research, and to bring these discoveries into useful application for the benefits of farmers and the nation.

The meeting adjourned at 4.30 P. M.

THURSDAY EVENING

The annual Farm Bureau banquet was attended by 720. Governor Herbert R. O'Conor and Mrs. O'Conor were honor guests.

Prizes for membership solicitation were awarded to the three highest in the state. Charles I. Boyle won first place, Clarence J. Kern, second and Joseph H. Parker third.

County awards were presented to the following counties:

Cecil County Farm Bureau for largest percentage increase in membership in 1939; Queen Anne's County Farm Bureau for largest numerical increase in membership, 1939; and Kent County Farm Bureau for largest percentage of farmers in Farm Bureau, 1939.

FRIDAY, JANUARY 12TH, 1940

Mr. Turner, *Chairman*: It is certainly gratifying that you are all here so early after last night. I will now ask the Secretary to read the call of the meeting.

Official notice is hereby given you that the Board of Directors of the Maryland Farm Bureau, Inc., has authorized the calling of the next annual meeting of the Corporation for January 11 and 12, 1940, Lord Baltimore Hotel, Baltimore, Maryland; the meeting to continue from day to day until all business that may come before the meeting has been properly disposed of. All sessions of the annual meeting will be held in the Ballroom of the Lord Baltimore Hotel.

Blanks are enclosed for you to submit the credentials of your directors and delegates for this meeting.

MR. TURNER: We will now have a roll call of the Credentials Committee by Mr. Sam Linton, Chairman.

ROLL CALL—FARM BUREAU MEETING OF DELEGATES

Allegany—R. C. Wilson, C. J. White; *Anne Arundel*—O. F. Grimes, Edwin P. Jones, Frank Wimmer, Jr.; *Baltimore*—F. Ridgely Todd, E. Ross Pearce, G. H. Hibbard, T. C. Sherrill, Henry F. Emmel, T. A. Mann, G. Paul Gore, Calvin Hershner, Geo. F. Scheeler; *Calvert*—J. Ellis Bowen, Julius Parran, Julius Bowen; *Caroline*—Richard Blackburn, Clarence Jones, F. D. Zeigler, Theo. Schmick, Roy Merrikin, C. J. Kern, Boone Jarrell, Henry Neal; *Carroll*—J. S. Bushey, W. A. Myers, J. L. Hersh, Russell Lindsay, J. C. McKinney, J. D. Young; *Cecil*—D. B. McDowell, R. H. Baker, Gwynn Goodman; *Charles*—S. C. Linton, D. Mattingly, J. B. Higdon, L. A. Starkweather; *Dorchester*—Earle R. Keene; *Frederick*—A. M. Etzler, Russell C. Thomas, J. Gilmore Garst, Harry H. Swomley, Russell A. Dudrow, Frank Remsberg, George Laken, Woodrow Souder, Gilmore Hamilton, Gary Utterback, Ephraim D. Zimmerman, Harry Roberts; *Garrett*—William Winterburg, Dorsey Guard, Charley B. Miller; *Harford*—Fred C. Jones, T. Roy Brookes, Gladden Davis, Arthur Jackson, Wm. L. MacDonald, Dr. Herbert R. Hoopes, S. H. Anderson, Mrs. Wm. Sinclair, A. G. Ensor; *Howard*—Roby Mullinix, G. Thomas Clarke, H. Jones Baker; *Kent*—H. S. Leaverton, Norman Ford, Harper Carter, H. S. Ford, Frank Sutton, Merritt Coleman, L. A. Sutton, Wm. Bell, D. C. Wray; *Montgomery*—James D. King, Ulysses Griffith, Eugene Walker, J. W. Jones, Wilson Poole; *Prince George's*—W. R. C. Connick, Wm. E. Duvall, J. E. Hogue, Hartwell Tucker, R. L. Cross; *Queen Anne's*—Merton R. Shawn, Noah Skinner, Casper T. Seney, A. T. Beachwood, R. B. Davidson; *St. Mary's*—Grenville Lewis, Frank D. Hayden, Joseph H. Crew; *Somerset*—Wm. T. Chaffey, Robert Chamberlain, W. C. Hayman, Harry Keenan, J. Miles Lankford; *Talbot*—Francis G. Shillinger, T. C. Schwaninger, A. F. Sweitzer, W. J. Shortall; *Washington*—Roy C. F. Weagley, Amos Reeder, I. N. Spielman, Wyand G. Rohrer, Cecil S. Haines; *Wicomico*—C. C. Phillips, W. S. Parker, Algie Winbrow, Levin S. Dashiell, Walter A. Spearin; *Worcester*—Willard P. Evans, Albert Dickerson, Preston Jones; *Associated Women of Maryland Farm Bureau, Inc.*—Mrs. Edwin D. Fry, Mrs. H. L. Davis, Mrs. Ira Downey, Mrs. Guy Carlisle, Mrs. F. D. Hayden, Mrs. Atlee Armour, Mrs. C. J. Kern, Mrs. Frances Grosscup; *Hillsboro-Queen Anne Cooperative Corp.*—Edwin Warfield, Charles I. Boyle; *Maryland Ayr-*

shire Breeders' Assn.—Arthur I. Bell; *Maryland Cooperative Milk Producers' Inc.*—R. W. Shermantine, Wilson A. Heaps, R. G. Spoerlein, George B. Kelly; *Maryland State Horticultural Association*—G. Rust Canby, Henry C. Whiteford; *Maryland Stockmen's Assn.*—J. Herbert Snyder, John E. Muncaster; *Maryland Tobacco Growers Assn.*—O. A. Sansbury, Russell Cross, Arthur W. Dowell; *Maryland Vegetable Growers Assn.*—F. Ridgely Todd, C. E. Hammond; *Maryland State Poultry Council*—Harry Reick, Mrs. Roberts.

MR. TURNER: A quorum being present we will now proceed with business. I might suggest that the directors of the various county organizations who have substitutes write out the names of their substitutes and send them in. Next in order is the reading of the minutes by the Secretary, Mr. Wise.

MR. TURNER: You have heard the reading of the minutes. Are there any additions or corrections? If not, they will stand approved as read.

The Treasurer presented the report for the year, copy of which is filed as "Exhibit A" in the permanent file of the organization.

MR. TURNER: You have heard the reading of the Treasurer's report. What are your wishes with regard to it?

Mr. C. C. Phillips moved it be accepted, and Mr. J. W. Jones seconded the motion and it was carried.

MR. TURNER: We will now have the report of the Audit Committee. Mr. R. C. F. Weagley, Chairman.

Auditing Committee Report for 1939

The Auditing Committee appointed by the President to examine the annual audit of the Treasurer, submits the following report:

We have carefully gone over the audit as submitted by Mr. William R. Dance, Registered Public Accountant, and to the best of our ability have checked it with the books and accounts of the Maryland Farm Bureau, Inc., as kept by the Treasurer, and found them O. K. in every way.

The securities in the bank box correspond with the records.

All bills due and presented up to and including December, 1939, have been paid.

We wish to call your attention to the increase in the Liquid Assets of $1,997.07, after the amount of $2,745.43 has been charged off as depreciation and bad debt.

We commend the officers and directors of the Maryland Farm Bureau, Inc., for their efficient management during the year.

Respectfully submitted,

(Signed) O. F. GRIMES
FRED C. JONES
ROBY MULLINIX
MERTON SHAWN
FRANCIS SHILLINGER
R. C. F. WEAGLEY, *Chairman.*

MR. TURNER: You have heard Mr. Weagley's report, what is your wish? Mr. J. D. King moved its acceptance, Mr. Wm. Connick seconded it and the motion was carried.

MR. TURNER: Mr. Walker, of the University of Maryland, had a lot to do with the Tax report, and I am going to ask him to come forward and give this report.

MR. WALKER: This tax report, as you will probably notice, if you glance over it, is quite comprehensive. We have tried to keep away from figures as much as possible, and, where there are figures, have tried to put interpretations. The purpose of this report, as well as other reports of the joint Committee of the Farm Bureau and the Grange, and especially this report in the intervening years between the meetings of the General Assembly, is to present such data as will assist in helping the members of the Legislature to arrive at a sound tax program for this State. Keeping that in mind, we hoped to add to the sum total of knowledge in the matters of taxation in this State so that we may refer back to them, and add for current purposes the necessary information so that we can intelligently proceed with our tax programs. Part of this report each year is devoted to the continuation of the data, in other words, keeping some of the data up to date, so you will notice the first page or two of the report contains a continuation of the tax program as of the last year and previous year, and next showing the tax on farm produce, and showing what it means in terms relating to the farm gross income.

We have to keep in mind that tax must come from farm income, and must try to see what our position is with the burden of that tax, so we have taken up this relating to the farm income, the amount of taxes in the Counties, and we have indicated at this time the considerable difference in tax rates—the wide difference that existed in tax rates among the various counties since 1928.

I believe, from 1928 to 1939, you will notice how these tax rates have changed in the various counties, and we have called attention to the fact that there should be some sound reason why county tax rates vary so much within the space of ten years. Then, we review the accomplishments of this Committee in reference to its recommendations in the report last year as indicated by the actions of the General Assembly. And there, I guess I will have to call your attention to the fact that it is incorrect to speak of the State Legislature in Maryland. We should really call it always the General Assembly. Referring to the recommendations of this Committee as reported by the two organizations, the Farm Bureau and the Grange, we find that to a large extent the recommendations of these two bodies have been put into action by the General Assembly, or by executive or administrative policy, and then too we find that our estimates of revenue are going to be to a large extent forthcoming; we are going to be on a sounder financial program for the State. We also take up the present income tax, and try to give a little interpretation and illustration of that, an

explanation of the way in which this income tax will work. You will notice a table that illustrates how you will apply this present State income tax.

We also study the road law briefly, and point out as the Chairman of the State Roads Commission did at the Maryland State Grange meeting, that none of these so-called construction funds provided by the Act of 1939 can be used for local farm-to-market roads unless such roads are so constructed that they can be taken into the State roads system. That means we will have to wait for a little while before we can get any substantial number of what I might call the low-cost, farm-to-market roads; that is, roads that would cost from ten to fifteen thousand dollars a mile.

We also take up some of the highway aspects, and show the number of farmers on dirt roads or improved roads, and in some cases show that report by counties, so that each county can know what its status is in reference to the farm road facilities. In two instances, namely, Carroll County and Caroline County, we have broken that down into election districts. There is a wide variation among the owners of farms in those election districts. We also have some comments to make on the conditions along the highways, and we have some suggestions and have a recommendation on that point.

We discuss the assessment procedure to some extent and we find that there is no uniform practice in assessing farm property. We think we should begin to throw some of these property tax laws out of the window and have a better basis for assessing the farm property of all kinds.

I call attention to the fact that nearly one-half of the farms are still directly bordering on dirt roads, their principal outlet is on dirt roads, and we realize we cannot hope to remedy in a short period of time the status where every farmer will have a surface road by his farm.

We have two tables in this report showing the status in reference to the activities of the General Assembly in reference to local laws vs. State laws, and we find a considerable portion of our time is taken up in that way. We raise the question as to whether or not there might be some change in procedure in the future in which the General Assembly would be primarily interested in State legislation and leave some of the local matters to the local governments.

I might comment on the last paragraph and say that there is a feeling among many persons with whom I have talked that the local road problem is very different from the major State road problems, and it might be well worth while to consider the designation of some person or persons who would concentrate their attention on the problems of the local roads, maintenance, etc. Now, if there is anything I have missed, and you want to ask questions, I will be glad to attempt to answer. I cannot answer every question but I will do my best.

MR. TURNER: Thank you, Mr. Walker. Mr. Wise, have you anything to say?

MR. WISE: In preparing this tax report, as Mr. Walker said, we prepared data for the use of the counties generally in their programs, and also for referring matters to the Legislative Council for them to study. It covers many points—efforts to provide the proper facilities on the Baltimore market, the income tax passed by the Legislature, and so on. There are no controversial points in this report. It simply is a study report and one that will be helpful to our various committees in their problems, and as representative of the committee and its chairman, I recommend its adoption.

Mr. Connick moved it be adopted, Mr. J. W. Jones seconded the motion and it was carried.

MR. TURNER: Next on the program is the report of the Resolutions Committee. This Committee has worked very hard. Mr. C. C. Phillips, our Vice-President, is Chairman of the Committee, and I will ask him to come forward and present it. Before we start, I want to say that we will have a full discussion of each resolution, and if any delegate joins in the discussion, or wishes to second any resolution, I will ask that delegate to rise and give his or her name and what county the delegate comes from, as we want that in the record.

Mr. Phillips, Chairman, then read the resolutions by number and moved the adoption of each in turn.

Resolution No. 1 was seconded by Mr. Connick and carried.
Resolution No. 2 was seconded by Mr. Austin and carried.
Resolution No. 3 was seconded by Mr. Jim King and carried.
Resolution No. 4 was seconded by Mr. Earle R. Keene and carried.
Resolution No. 5 was seconded by Mr. Connick and carried.
Resolution No. 6 was seconded by Mr. G. Davis, and carried.
Resolution No. 7 was seconded by Mr. G. Davis.

MR. CREW: I am opposed to that.

MR. TURNER: To all trade agreements, or to this particular resolution?

MR. CREW: Well, Mr. Chairman, I am opposed to the reciprocal agreements with foreign countries to a very great extent, and I think that it will interfere with our farm products being sold. I am also opposed to any trade treaty where the labor will be cheapened in this country for the benefit of labor in foreign countries. Now, with the treaty with Japan, the articles from Japan come to this country, and they interfere with the manufacture of our products in this country.

MR. TURNER: The trade treaty with Japan has been cancelled. It will end on January 26th.

MR. CREW: I don't know about that, but I am thinking also of the agreement with the Argentine. I think it would be well to discuss this. I am not sufficiently acquainted with all this, and I would like to have someone discuss it.

MR. TURNER: We read that that treaty also has fallen through, broken down. Does anyone wish to discuss this? (No answer.)

Resolution No. 7 was carried.

Resolution No. 8 was seconded by Mr. A. J. White and carried.

MR. TURNER: Before going further, I want to say that in Resolution No. 7 I think that latter part where it has to be unanimously approved by the Secretaries of State, Commerce and Agriculture would meet your objection.

Resolution No. 9 was seconded by Mr. Melvin Wheatley and carried.

Resolution No. 10 was seconded by Mr. Richard Blackburn and carried.

Resolution No. 11 was seconded by Mr. Chaffee, and carried.

Resolution No. 12 was seconded by Mr. J. D. King and carried.

Resolution No. 13 was seconded by Mr. Sam Linton and carried.

Resolution No. 14 was seconded by Mr. Connick and Mr. Linton and carried.

Resolution No. 15 was seconded by Mr. Jones, of Harford, and carried.

Resolution No. 16 was seconded by Mr. Mullinix.

First line of second paragraph change "recommend" to "commend."

MR. CONNICK: Although a member of the Resolutions Committee, I was not present when this particular resolution was passed, and I think you have omitted something—we should have a license for back seat drivers, or they pay a good heavy fine.

Resolution No. 16 was passed.

Resolution No. 17 was seconded by Mr. G. Davis and carried.

Resolution No. 18 was seconded by Mr. C. J. White and carried.

Resolution No. 19 was seconded by Mr. Linton and carried.

Resolution No. 20 was seconded by Mr. R. H. Baker and carried.

Resolution No. 21 was seconded by Mr. Schmeck and carried.

MR. SPEARING: I know we have some grading law in this State, some provisions that the railroads have to follow, have to sell under the same laws, but I know that when you try in the city to buy ten pounds of sweet potatoes you are just as likely as not to get a different grade. Just how far does that grade law go?

MR. TURNER: I do not understand that this grade law is compulsory, only voluntary.

MR. WISE: This grading law is only voluntary. When it goes into action the producers of the product can ask that certain grading standards be set up. It has not been set up yet and no one has asked that it be put in action.

MR. CHAFFEY: That is very important. We had quite a fight in our county to try and make it effective on some of our products.

MR. WISE: The State office recommends that the trucking counties discuss this in their groups. Our trouble was that they did not realize the importance of it. They do not know what a valuable piece of machin-

ery we have got. If the people understand the value of this, they could get a great deal out of it. That is the reason we brought in this resolution.

MR. TURNER: If you will read the second paragraph, I think that will meet your request.

Resolution No. 22 was seconded by Mr. Grimes and carried.

Resolution No. 23 was seconded by Mrs. Edwin Fry and carried.

The word "policies" at end of first line should read "facilities."

Resolution No. 24 was seconded by Mr. Grimes and Mr. Connick and passed.

Resolution No. 25 was seconded by Mr. Connick, and accepted with the following amendment—after word "District" in third line add "of Columbia or the Federal Government."

Resolution No. 26 was seconded by Mr. Ridgely Todd, and carried, with addition of "Inc." after the word "Bureau" in first line.

MR. ANDERSON: I would like to ask for an explanation of that.

MR. TURNER: We will call on Dr. Symons for that.

DR. SYMONS: That will afford a greater means of distribution of surplus commodities over the country. It is proposed to have the families on relief purchase stamps through a regular system, and those stamps would justify their being provided with commodities that were on the surplus market, and as such would provide a means of using our surplusses. These products are bought by the Surplus Commodities Corporation for distribution throughout the country. They have found an increasing use by these families of these products and as such we thought it would be a great advantage to our people here to have the Stamp Plan in Baltimore City.

MR. TURNER: Do they have to be on relief to buy those stamps?

ANSWER: Supposed to be for relief, but not necessary.

MR. NUTTLE: I think it would be a very good thing. I do not see any objection to it.

MR. TODD: I do not see any reason to include Washington in it.

DR. SYMONS: My understanding is that the reason Washington was included is because of the accessability of Washington to Baltimore, and as Washington has no large warehouses, they would draw out of the Baltimore warehouses.

Resolution No. 27 was seconded by Mr. Braddock, and carried;

"counties" in second line to be changed to "countries."

Resolution No. 28 was seconded by Mrs. Edwin Fry, and carried.

"Inc." to be added after word "Bureau."

Resolution No. 29 was seconded by Mr. J. D. King and carried.

Resolution No. 30 was seconded by Mr. Austin and carried.

Resolution No. 31 was seconded by Mr. Fred Jones, and carried.

QUESTION: What is the nature of the Seed Bill?

MR. TURNER: We just want to make a study of all Seed Laws in other States and pick out the best law to have passed for the protection of our farmers.

Resolution No. 32 was seconded by Mr. Robert Baker and carried.

Resolution No. 33 was seconded by Mr. Hode and carried.

Resolution No. 34 was seconded by Mrs. Harry Davis, and carried.

Resolution No. 35 was seconded by Mrs. Grosscup and Mr. Zimmerman and carried.

Resolution No. 36 was seconded by Mrs. Harry Williams, with the amendment that Mrs. Herbert R. O'Conor be added to the names in first paragraph and carried.

It was then moved and seconded that the report as a whole be adopted. This motion was carried.

Dr. Shermantine requested that Resolution No. 26 "Schulte Bill" be reconsidered and a resolution differently worded be passed.

Dr. Shermantine moved that No. 29 be reconsidered, and Mr. Wheatley seconded the motion.

After several resolutions suggested, Dr. Symons presented the following resolution:

> That we direct the Executive Committee to confer with Maryland Cooperative Milk Producers, the Associated-Interstate Milk Producers, and the Maryland-Virginia Association, and work energetically with these associations and other agencies for the defeat of the Schulte Bill now before Congress, or any similar legislation to this end.

Mr. Nuttle moved that this resolution be adopted, Mr. Chaffee seconded the motion and it was carried—as a substitution for Resolution No. 29, previously carried.

MR. TURNER: I will now call for resolutions from the floor.

Dr. Symons presented the following resolution:

> The Maryland Farm Bureau, Inc., in annual meeting assembled, registers its deep regret for the loss of Professor J. E. Metzger, late Director of the Maryland Experiment Station, and hereby extends its warmest sympathy to his bereaved widow. We feel that in the passing of Professor Metzger, the State has sustained a severe loss as a scientist, a research worker and a friend of agriculture.

Mr. Linton moved its acceptance, Mrs. Fry seconded the motion, and it was carried.

The following resolution was moved, seconded and carried:

> We congratulate the State Insurance Commissioner upon his efforts to prevent fires in Maryland and pledge our cooperation in promoting elimination of fire hazards and the prevention of fires."

MR. WINTERBERG: I think a resolution should be passed with reference to putting fish in the streams. I do not see why the people of the State, the taxpayers, should pay for all that. I favor a resolution asking the State Fishery to put some restriction on that.

MR. TURNER: I think if you will write a letter to the State Farm Bureau and ask that that matter be referred to the Directors, that will cover that.

I will now ask for a report from Mr. W. L. Smith, Chairman of the Program Committee.

MR. PHILLIPS: Before that, as Chairman of the Resolutions Committee, I would like to thank all the members of that Committee for their cooperation.

MR. SMITH: The Program Committee had two meetings—one prior to the annual meeting. Our program was submitted to and accepted by the counties. We worked with it for a year, and we think the program has worked out pretty good. The Committee, the other day, had a meeting and we made just a few changes. I do not believe in making lots of changes just for the sake of making them, not unless we have something important to change. The program for the next year will be practically the same, as far as the program is concerned, and we will try to carry it out.

The State Committee accepted the 5,000 quota by the National organization. We have not raised the quotas in the counties. It will be a good job this year to get your quota of membership. I hope you will take those little reports we handed out to you and go over them. There will be no change in the Committees.

Last year we had a meeting of the leaders of the Farm Bureau in Baltimore in the spring, and this year we want to have a meeting similar to that in each county, and then our annual meeting; a State Board meeting with County Secretaries in Baltimore some time in the future; follow that up with the County Board of Directors and Membership Workers. We are pretty well decided who is to be invited into those meetings. Then, we have the June week meeting in each district. And, we have a State-wide meeting in Baltimore some time in the fall.

We have our discussion groups in the fall, instead of in the spring. We also have a district meeting in the various districts of the State Farm Bureau. The State is divided into various districts, one in Southern Maryland, two on the Western Shore and one on the Eastern Shore. We call the people together to one central point and try to have a real, good enthusiastic meeting out in the districts to get the people closer together. The Committee thought that as this year is election year, we would try to get our membership work done a little sooner.

One important thing I want to emphasize—the Committee decided that it will in the future in making awards for largest percentage increase of membership in counties, give on a three-year period, not on a one-year period. It is up to you people to decide that, but we have observed that sometimes a county will fall way down in one year, and next year have a splendid opportunity to come back, and so we thought the three-year period would be better. Since Mr. Wise has been your Secretary-Treasurer, the Maryland Farm Bureau has made a steady gain of membership, even with adverse conditions; we were able to show

a two hundred increase in membership this past year, and we are still going to do better. I submit this report for your consideration.

Mr. Connick moved its adoption, and Mr. Grimes seconded it and the motion was carried.

> Resolved that the actions of the Board of Directors as contained in the minutes of their proceedings since the last corporation meeting, be and are hereby approved and ratified.

Mr. Linton moved it be adopted, Mr. Austin seconded it and the motion was carried.

MR TURNER: I am now going to ask your past President, the Bald Eagle of Caroline, to come and take the chair.

MR. NUTTLE: I am going to get sensitive some time about that. Just because my hair does not grow a little higher on the top of the head like Phil Turner's does not mean the brain is not there. Sometimes the hair goes down and does not find anything there.

We will now have the report of the Board of Directors acting as a Nominating Committee.

MR. WISE: Your Board of Directors as a Nominating Committee nominates P. C. Turner to be President for the year 1940.

Mr. Wise suggested that as a written ballot was required in the By-Laws a motion had to be passed in order to elect by acclamation, Mr. Nuttle thereupon moved and Mr. Davis seconded the motion that the vote for officers be made by acclamation. Motion carried.

Mr. White moved that nominations be closed, and the motion was seconded and carried.

Mr. Connick moved that the Secretary cast the ballot and there being no dissenting vote, Mr. Wise cast the ballot for Mr. Turner as President.

MR. TURNER: We will now have the report for Vice-President for 1940.

MR. WISE: Your Committee nominated Claude C. Phillips to be Vice-President for 1940.

MR. TURNER: Any other nominations?

Mr. C. Davis moved the nominations be closed, and the Secretary be directed to cast a ballot for Mr. Phillips as Vice-President.

This was seconded by Mr. Austin, of Dorchester, and there being no dissenting vote, Mr. Wise cast the ballot for Mr. Phillips as Vice-President for 1940.

MR. TURNER: Ladies and gentlemen of the Farm Bureau, I am not going to make any speech. You have all this week heard a lot out of me. All I can say is that I deeply appreciate this expression of your good will, and your approval of my efforts. I have done my best and I promise you I will continue to do so in the future.

MR. PHILLIPS: Ladies and gentlemen, I deeply appreciate the honor you have bestowed upon me this morning, and I pledge I will help to make 1940 a banner year for the Farm Bureau in Maryland.

Mr. Linton read the list of Directors who have been certified, and upon a vote being taken they were declared elected.

Directors:

Allegany County—R. C. Wilson.
Anne Arundel County—Oscar F. Grimes.
Baltimore County—F. Ridgely Todd.
Calvert County—J. Ellis Bowen.
Carroll County—J. S. Bushey.
Caroline County—Richard Blackburn.
Cecil County—D. B. McDowell.
Charles County—S. C. Linton.
Dorchester County—Earle R. Keene.
Frederick County—A. M. Etzler.
Garrett County—William Winterburg.
Harford County—Fred C. Jones.
Howard County—H. Roby Mullinix.
Kent County—H. S. Leaverton.
Montgomery County—James D. King.
Prince George's County—W. R. C. Connick.
Queen Anne's County—Merton R. Shawn.
St. Mary's County—Grenville Lewis.
Somerset County—Wm. T. Chaffey.
Talbot County—Francis G. Shillinger.
Washington County—Roy C. F. Weagley.
Wicomico County—C. C. Phillips.
Worcester County—Willard P. Evans.
Associated Women—Mrs. Edwin D. Fry.
Mrs. H. L. Davis.
Mrs. Guy Carlisle.
Mrs. F. D. Hayden.
Mrs. Christopher Wood.
Mrs. Algernon Carter
Mrs. C. C. Phillips.

Honorary Directors:

Hillsboro-Queen Anne Cooperative Corporation—Edwin Warfield.
Maryland Ayrshire Breeders' Association—Arthur I. Bell.
Maryland Cooperative Milk Producers' Inc.—R. W. Shermantine.
Maryland State Horticultural Society—G. Rust Canby.
Maryland Stockmen's Association—J. Herbert Snyder.
Maryland Tobacco Growers Association—O. A. Sansbury.
Maryland Vegetable Growers Association—F. Ridgely Todd.
Maryland Crop Improvement Association—L. A. Renshaw.

Duly moved, seconded and carried that these Directors be confirmed by the Delegate Body.

RESOLUTIONS 1940.
MARYLAND FARM BUREAU, INC.

1. We pledge anew our confidence in President O'Neal and the other officers of the American Farm Bureau Federation and commend their efforts to correlate all organized farmers into a National program for agriculture. We endorse the resolutions adopted at the 21st Annual Meeting of the American Farm Bureau Federation in as far as they are applicable to our State.

Farm Tenancy

2. We are heartily sympathetic with a conservative national program for reducing tenancy and the encouragement of farm and home ownership.

We wish to compliment the Farm Security Administration for the conservative appraisal of farm values; the care taken in the selection of prospective purchasers and the supervision given to such purchasers. Next to low prices of farm products no single element delays progress of rural areas more than the high percentage of farm tenancy. We welcome this sensible approach to the tenancy problem.

Farm Credit

3. The Farm Credit Administration has been efficient and effective as an independent agency. Its operations have made funds more readily available and have reduced the cost of farm credit to 67% of the pre-war cost. Farmers appreciate this needed service in the purchase of land, in the operation of their farms and in the backing given to their cooperative enterprises.

We urge the continuation of the present low emergency interest rates and the sound management policies of this system.

We protest any reorganization of the Farm Credit setup that would impair its independent status.

If developments indicate that the recent shift threatens the independence of the Farm Credit Administration, we believe that it should be removed from the Department of Agriculture and restored to its former status, responsible directly to the President and the Congress.

Conservation

4. We recognize the importance of a constructive Conservation program in the State and commend the work of the Chesapeake Bay Commission headed by Mr. Edwin Warfield and the Upland Game Commission headed by Mr. E. Lee LeCompte for the work they are doing in their respective fields. We urge a study be made to provide sufficient information for our members to vote intelligently on the coming referendum.

We are still convinced that a unified program is the most satisfactory to safeguard the interests of all.

Forestry

5. Inasmuch as more than one-half of the forest land in Maryland is in farms and provides a substantial revenue to farmers, we believe that forestry should continue under the State Department of Agriculture and not be set up as an independent agency.

Land Use

6. Land use is one of the most important agricultural problems to be solved. There is considerable land in Maryland unsuited for profitable production that should be diverted from farming to forest. We urge the speedy development of a constructive land use program and recommend that a severance tax and other necessary legislation be prepared and sponsored.

Trade Agreements

7. We believe in the principle of Trade Agreements and they are a contributing factor toward Peace and Good-Will among nations. In negotiating such agreements no concessions should be made which might have the effect of reducing or holding the domestic price of any agricultural commodity below the parity level and we endorse the resolution passed by the American Farm Bureau Federation on the proposed trade agreement with Argentina.

We insist that in the negotiation of trade agreements, economic factors be given greater consideration than the weight accorded to the factors of diplomacy and statecraft. To this end we urge that the Reciprocal Trade Act be amended to provide that no agreement be consummated unless unanimously approved by the Secretaries of State, Commerce and Agriculture.

Monetary Policies

8. We commend the action of the United States Senate authorizing its Banking and Currency Committee to make a special study of monetary problems and policies and their effect upon commodity price levels.

Producers Protection

9. Resolved that this meeting of voting delegates requests the executive and legislative committees of the Farm Bureau to consider preparing a general bill providing for bonding all individuals and firms contracting with farmers for the purchase of their products.

Wage and Hour

10. We continue our position that all Agricultural labor and labor in the first processing of agricultural products shall be exempt from Wages and Hours legislation.

We again protest against the rulings of the Administrator of the Wages and Hours Act, which are so clearly contrary to the intent of Congress when it passed the Act, so we call upon Congress to clarify

the exemptions relating to "Area of Production" and the seasonal and perishable commodities and urge our Maryland Congressmen and Senators to support such liberalizing amendments.

Marketing Agreements

11. We urge the enactment by Congress of pending legislation to extend the order provisions of the Agricultural Marketing Agreements Act of 1937 to any agricultural commodity.

Taxation—Tax Committee Report

12. The last legislature adopted 85% of the tax recommendations made in our 1938-39 report. Diversion of road funds has been stopped, economy in Government has been inaugurated, a balanced budget has been achieved and a more equitable state tax system has been secured by the addition of the income tax. We are gratified with this progress and commend those responsible for it.

We appreciate the work done by the Committee on the 1939-40 report containing comprehensive information on tax levies, new data on road problems, suggestions on assessment practices and a complete outline of the 1939 revenue measures.

We urge our county units to study this data, utilize the information in their county efficiency and economy programs.

We hereby endorse the recommendations contained in this report.

Roads

13. We express our appreciation to the Governor and the Maryland legislature in stopping the diversion of road funds and urge continuance of this policy.

We commend the Chairman of the State Roads Commission in his desire to build cheaper but more miles of Farm-to-Market roads and urge the Counties to make a study of the available data to guide them in their road improvement program.

We recommend the following:

1—That the present law be amended to allow the construction of cheaper but more miles of Farm-to-Market roads.

2—Expand the use of convict labor on roads; amend the law to give the Counties the privilege of using convict labor to build, grade or prepare material to maintain hard surface or gravel Farm-to-Market roads.

3—That legible direction signs be placed on improved highways where dirt, gravel or slag roads intersect them.

4—Appointment of a man in the State Roads Commission to supervise County road maintenance for all Counties except those maintaining their own.

Rural Electrification

14. We express our gratification at the hundreds of farms that have been afforded the benefits of high line electricity by the R. E. A., and we urge all sections of the State to avail themselves of its facilities.

Fair Trade Act

15. The Courts having ruled adversely on a portion of the Fair Trade Act (Chapter 239) which compels retailers to sell articles at fixed prices; we urge the repeal of the entire Act since it is an unjust burden on the consumer.

Public Safety

16. We heartily endorse the united efforts of all agencies working toward the prevention of automobile accidents and the elimination of road hazards.

We commend the Governor's action in setting up a State-wide Safety Council. Instruction in schools on safety, which has been conducted by the Maryland State Police in parts of our state, should be encouraged and continued.

The congestion of traffic on single highways in Maryland, caused by large trucks traveling too close together, does not permit faster moving vehicles an opportunity to pass for miles at a time. We recommend that legislation be enacted to prevent the close traveling of trucks and urge the enforcement of such legislation.

We also favor a movement to popularize pedestrian observance of traffic regulations.

Cooperative Development

17. We believe in the principles of business cooperation among farmers in all fields and urge its expansion. The organization of Farm Bureau cooperatives in Hagerstown, Union Bridge, a Petroleum Cooperative in Frederick and Carroll Counties, the building of a Cooperative Lime plant in Frederick and closer working relationship with Cooperatives in Maryland shows that farmers can and are helping themselves through cooperative action.

We are desirous, as a Farm Bureau organization, of using greater efforts to further this self-help program.

The Cooperative Development Committee of the Maryland Farm Bureau is sponsoring the holding of a two or three-day Cooperative School for leaders and employees in 1940 and recommend the development of education in cooperative principles among rural youth and adults.

We urge the use of Insurance services of the Farm Bureau as a valuable part of our cooperative development program.

University of Maryland

18. We appreciate the hearty cooperation received from the University of Maryland, from its officers, faculty and Extension workers. We appreciate the addition of physical equipment and personnel in teaching

forces that have made possible research and education which will mean much to our farmers and future farmers. We will cooperate in every way to see that its efficiency is second to none.

Appropriations

19. Having received appropriations from the State to combat Plant, Animal and Poultry diseases and pests, we direct our Executive Committee to make a thorough study of these projects. Each interested group should be given a hearing so that the Committee can intelligently make their requests in time to be included in the next State budget.

Japanese Beetle Appreciation

20. The Maryland Farm Bureau, Inc., has been active in sponsoring and furthering cooperative Japanese beetle retardation and control work.

The work is now established on a sound basis and control activities are functioning in a satisfactory manner.

The Maryland Farm Bureau, Inc., hereby expresses its thanks and appreciation to all agencies for their cooperation in sponsoring the program, and especially commends the support given the work by the Boards of County Commissioners throughout the State.

State Grading Laws

21. A State law providing the voluntary establishment of Grades and Standards was passed by the last Legislature.

We urge our farmers to make a study of this law and use it to their advantage in improving their markets.

Relief

22. We urge continued scrutiny of expenditures for relief and ask that more consideration be given to local authorities in fixing rates of pay for relief and the generally unemployed.

Rural Health

23. We recognize the great need for more adequate health facilities and care for rural people in Maryland, and also feel that studies should be made and efforts redoubled to use every means already at hand to alleviate suffering and improve the physical and mental status of our citizenry.

In this we will need the cooperation, advice and support of the State Department of Health and other groups seeking to find solutions to these pressing problems.

We recommend that a representative of this organization be appointed to work with such groups, whenever and wherever possible, in order to bring before this organization developments of a Health program for Maryland.

We further recommend that as there are active Advisory Health Councils and Public Health Law Committees now functioning coopera-

tively with Health Departments in some counties, a representative of this organization cooperate whenever and wherever possible in the formation of such groups.

Baltimore Market Facilities

24. The Baltimore wholesale fruit and vegetable market facilities are inadequate to present day needs.

A lack of modern terminal facilities contributes toward inactive competition, disjointed and confused movement of produce and great loss of time as well as income to the producers of this State.

A Market Bill proposing the establishment of modern terminal facilities, condemnation of property, and the authority under which such a market shall operate, was prepared and introduced in the last session of the legislature, passed the Senate and was held in the Judiciary Committee of the House. This question has been submitted to the Legislative Council with a request for action.

The Maryland Farm Bureau pledges its full strength to secure legislation necessary for the improvement of facilities on the Baltimore Wholesale Fruit and Vegetable Market.

Washington Markets

25. We heartily endorse the efforts of the Truck Growers in the territory adjacent to the District of Columbia to have the officials of the District of Columbia take over and operate the "North East" market in Washington, and we urge all Maryland representatives in the Congress to support a bill to accomplish this purpose.

Surplus Commodities Stamp Plan

26. We urge the Maryland Farm Bureau, Inc., to request the Stamp Plan division of the Surplus Commodities Corporation that a survey be made of both Baltimore and Washington with the view to having surplusses moved through the Stamp Plan this coming season.

Consumers Cooperative Movement

27. Consumers Cooperation has proven very effective in reducing distribution costs and in controlling monopolies in other countries. We believe that this project warrants continued study and we urge our Planning Groups to investigate and discuss this movement fully and freely.

Low Rental Houses

28. Low rental houses have been proposed by the United States Housing Authority in several counties of the State. Under the present law several features seem impractical or inapplicable to the needs of the State.

We suggest that the Maryland Farm Bureau, Inc., give consideration to present legislation and pending legislation, and study and offer suggestions for a plan more nearly meeting the needs of the rural communities.

Schulte Bill

29. We direct the Executive Committee to confer with Maryland Cooperative Milk Producers, the Associated-Interstate Milk Producers and the Maryland-Virginia Association, and work energetically with these Associations and other agencies for the defeat of the Schulte Bill now before Congress, or any similar legislation to this end.

Transportation

30. We reiterate our insistence upon the maintenance of highly efficient, economical systems of transportation, under private ownership with only such reasonable regulation where it is in the public interest.

Seed Law

31. We urge the Legislative Committee of the Maryland Farm Bureau to make a study of the Seed Laws of other States and recommend to the Board of Directors of the Maryland Farm Bureau that an adequate Bill be drawn up for the consideration of the Maryland Legislature at the next session.

State Fair Board

32. Having aided in the passage of the Bill creating the Maryland State Fair Board, we heartily endorse their program which is building our agriculture exhibitions along the lines of education to our farmers and approve their policy of giving special attention to 4-H and F. F. A. boys and girls.

Dog Legislation

33. We urge the inauguration of a study by Counties of County Dog laws with the view of developing some plan for the conservation of our game and especially for aiding our poultry and livestock industries.

Planning Group Meetings

34. After a two-year trial of the discussion type meeting in the State, we are convinced of its welding power and pledge our efforts to an extension of its use in Maryland.

International Relations

35. We reaffirm the historic position of our organization in supporting all honorable methods of maintaining peaceful relations with the Nations of the world, and we pledge our support to President Roosevelt in his policy of using all just and rightful means to keep this nation out of the present European conflict.

We further recommend building better international relations by cultivating a more tolerant and understanding attitude on the part of children, through choice of books, toys and materials used, stimulating interest and understanding of other Nations, as a means of promoting ultimate peace in an inter-related world.

Because of the significance of the Associated Country Women of the

World, in cultivating international friendships and in carrying forward education, that is dedicated toward the eventual substitution of peace for war, we, as individuals, have an opportunity to contribute toward this "PENNY FOR PEACE" plan.

Fire Prevention

36. We congratulate the State Insurance Commissioner upon his efforts to prevent fires in Maryland and pledge our cooperation in promoting elimination of fire hazards and the prevention of fires.

Memoriam

37. The Maryland Farm Bureau, Inc., in annual meeting assembled, registers its deep regret for the loss of Professor J. E. Metzger, late Director of the Maryland Experiment Station, and hereby extends its warmest sympathy to his bereaved widow. We feel that in the passing of Professor Metzger, the State has sustained a severe loss as a scientist, a research worker and a friend of agriculture.

Appreciation

38. We, the Maryland Farm Bureau, Inc., in Convention assembled, desire to recognize with gratitude the contributions made to our program by his Excellency, the Governor of Maryland, Herbert R. O'Conor, Mrs. O'Conor, Edward A. O'Neal, President of the A. F. B. F., Miss Mary Sue Wigley, Rev. Wm. C. Roberts, Dr. T. B. Symons, Dr. H. C. Byrd and Albert K. Rowswell.

We are grateful to the management and staff of the Lord Baltimore Hotel for their fine cooperation.

We extend our thanks to all those who, as speakers, committee members and workers helped to make this twenty-fourth annual meeting such an outstanding success, and especially do we recognize the extra hours put in by President Turner, Secretary Wise and others of the staff of our State organization.

MR. CONNICK: You will probably notice the absence of any resolution here concerning tobacco. That is a pretty warm question in Southern Maryland. That is the place to go if you want to get thoroughly warm on that subject. I have a request, however, to make from the tobacco growers of Southern Maryland to the personnel of the Farm Bureau, and that is that the officers and the membership of the Farm Bureau in the State of Maryland use every effort to see that tobacco grown in this State be given as much preference as possible.

The Convention, upon motion, duly made, seconded and carried, adjourned at 12:00 noon.

LEGISLATIVE REPORT FOR 1939

The Farm Bureau legislative program at the General Assembly of 1939 was successful and Maryland farmers will benefit in many ways from this work. A revenue program based on a classified income tax

was passed. This placed the state fiscal system on a fairer basis and also provided a balanced budget. Adoption of this revenue program prevented consideration of a cigarette tax, increased real estate levy or a sales tax.

The Bangs' eradication fund was increased to $125,000 per year and makes possible successful continuation of this program for the benefit of the dairy industry. Maryland is one of the few states to add to this appropriation in 1939. Money was provided for the enforcement of the fresh egg law, the eradication of pullorum disease and many other projects to control pests that cause loss to farmers. Among these are tobacco disease control, strawberry disease control and inspection, and foul brood control.

Drainage on the Eastern Shore will receive additional stimulus and the soil conservation program will be furthered by the funds provided.

After many years of work a state grading law was enacted giving fruit and vegetable growers a chance to improve their markets. Farm service roads will benefit as the diversion of $3,800,000 gas funds was stopped.

During this session 1,353 bills were introduced and each was checked for its effect on agriculture. The progress of 150 of these bills was followed closely. Some were opposed, some were sponsored and several amended. This report includes only the most important ones that directly affect the farmers' business.

REVENUE BILL—SENATE NO. 96—For the past fifteen years Farm Bureau has urged an income tax as the chief source of additional state revenue, supplemented by luxury commodity taxes. The 1939 revenue measure, Senate Bill No. 96, embodied these main features and is now a Maryland law. The following table shows the schedule of special State taxes and how they change under the new law:

Income—

Old levy—½ of 1%. New levy—2½% on earned, 6% unearned.

Auto Titling—

Old levy—1% of value (new cars).
New levy—2% (new cars).

Music Boxes—

Old levy—$15. New levy—$15.

Beer—

Old levy—2 7/16c per gallon. New levy—3c per gallon.

Documents—

Old levy—10c per $100 of amount.
New levy—10c per $100 of amount.

Liquor—

Old levy—$1.10 a gallon. New levy—$1.25.

Pari-Mutuel Wagers—

Old levy—1% tax. New levy—2% tax.

Admissions and Passes—

1% gross receipts; 5c, 10c and 15c on passes. New levy—No change.

Pinballs—

Old levy—$35.00 per machine. New levy—No levy.

Cosmetics—

Old levy—10%. New levy—No levy.

These taxes are expected to raise $8,500,000 per year and make it possible to balance the state budget.

BUDGET—HOUSE BILL No. 110 for 1940-41: *Sufficient funds* were provided in the revenue bill to put the state on a pay-as-you-go basis, long advocated by farm organizations.

GAS TAX DIVERSION: Stopped in budget and over $3,800,000 will be returned to the road fund. Farm Bureau has worked with the Maryland Highway Users to prevent diversion of these road funds for the past several years. All Maryland roads will benefit and more farm to market roads will be built.

BUDGET APPROPRIATIONS: The Governor included $100,000 for Bangs' Disease eradication and $40,000 for Japanese Beetle control for each year in his budget.

SUPPLEMENTAL BUDGET: The Farm Bureau Legislative Committee conferred with Governor O'Conor on additional funds needed to combat pests and diseases causing losses in agriculture. Although the requests were reduced, an appropriation was made for each item as follows:

	Requested	*Received (Yrs. 1940-41)*
Soil Conservation and Drainage	10,000	$ 7,500
Bee Disease Control	2,500	2,000
Strawberry Disease Control	4,500	4,500
Tobacco Disease Control	5,000	4,500
Poultry Disease and Control	8,000	5,000
Enforcement of Fresh Egg Law	10,000	6,000
Bangs Disease Control	50,000	25,000

Thus the total Bangs money is $125,000 annually, an appropriation for Maryland's representation at the International Poultry Show was included in the budget, contingent upon the passage of Senate Bill No. 57. Bill was passed.

Special Appropriations

LATERAL ROADS GAS TAX FUND, H. B. No. 379: This re-enacts with amendments, the 1933 law allocating the 1½c gas tax to the counties and Baltimore City. Amendments to the law include an option for the counties to take over their county roads. Frederick County roads are turned back to the county. Provision is also made for the state to maintain streets in certain incorporated towns.

CONVICT LABOR, H. B. No. 447: Provides $200,000 each year (formerly $100,000) for work on state and county roads by convict labor.

SPECIAL FUNDS, S. B. No. 465: Unexpended funds from former appropriations were used to provide for special services, two of which help farmers:

Japanese Beetle 1939 deficit	$17,772.29
State Department of Drainage, to improve drainage in Wicomico and Worcester Counties	14,222.82

Bills Sponsored—Passed

H. B. 328—WEIGHTS AND MEASURES "CANTALOUPES."
Right to inspect to enforce present law.

H. B. 507—TRADEMARKS FOR FARM PRODUCTS.
Grants right to State Board of Agriculture to establish trademarks and to regulate use thereof.

H. B. 508—FARM PRODUCTS.
Provides for the inspection and certification by the State Board of Agriculture of farm products in this state.

H. B. 509—FRUITS AND VEGETABLES GRADING.
Provides for the voluntary establishment of grading and packing standards and the proper markings of containers.

H. B. 620—INSPECTION—HONEY BEES.
Provides for the inspection and removal or selling diseased honey bees.

H. B. 621—INSPECTIONS—MOSQUITO CONTROL.
Empowers State Board of Agriculture to carry on certain activities for control or elimination of mosquitoes. To construct and maintain ditches, spread insecticides and take other steps to control mosquitoes.

Miscellaneous Measures Passed

Amended

S. B. 105—INSPECTIONS—FUNGICIDE—INSECTICIDE.
Provides that any fungicide or insecticide shall be in container marked with manufacturer's name and address, name of brand, standard or quality and net weight. In addition, all insecticides and fungicides containing arsenic or other substance highly toxic to man must be labelled "poison" in red and an antidote named.

H. B. 270—INSURANCE—AGENTS AND BROKERS.
Requires that all new agents licensed after June 1, 1939, to sell casualty insurance shall pass an examination for which the fee is $5.00 (reduced by Farm Bureau amendment from $25.00).

H. B. 462—Maryland Social Security Law.

Amendments proposed by Social Security officials restricted the exclusion of agricultural labor under the exemptions, by adding to the old law "which term shall be strictly construed so as to apply only to ordinary farm operations."

A Farm Bureau amendment struck out this clause and left the law as it was originally passed in 1937.

Bills Opposed—Defeated

H. B. 154 and 265—State Wages and Hours Law.

H. B. 50—State Labor Board.

The Wages and Hours Bills provided for a minimum wage of 25c at start and 40c an hour after a period, with a minimum week of 44 hours reducing to 40 hours. In one bill 154 agricultural labor was not exempted. There was no exemption of farm labor in the State Labor Board Bill. All these measures were opposed by the Farm Bureau and did not get out of committee.

H. B. 243—Tax on Cigarettes.

Provided for a tax of 1c on 10c but was held in committee.

H. B. 588—Sales Tax.

Provided for a 2% sales tax. Held in committee.

H. B. 631—Kerosene and Crude Oil Tax.

Provided for a tax of 1c per gallon on all kerosene and crude oil sold in Maryland. Held in committee.

H. B. 792—Lateral Gas Tax Portion to Towns.

Provided for allocation of about 20% of the 1½c gas tax to incorporated towns. This would have come out of the counties' share and meant less farm to market roads. Bill held in committee.

Bills Sponsored—Defeated

S. B. 199—Canners Bonding Bill.

Passed the Senate, given an unfavorable report by House Judiciary Committee by a 9 to 10 vote. Baltimore representatives on the committee opposed the bill and caused its defeat.

S. B. 464—Baltimore Market Authority.

Passed the Senate and was given an unfavorable report in the House Judiciary Committee due to opposition of Baltimore.

ANNUAL MEETING OF THE MARYLAND AGRICULTURAL SOCIETY

Friday, January 12, 1940

Mr. P. C. Turner presiding. Meeting called to order at 12:00 noon. The secretary read the call of the meeting.

December 22, 1939.

To County Secretaries and
Affiliate and Associate Secretaries.

Notice of Annual Meeting of the Executive Council of the Maryland Agricultural Society

Dear Sir:

The annual meeting of the Executive Council of the Maryland Agricultural Society will be held January 12, 1940, at 11 A. M., Lord Baltimore Hotel, Baltimore, Maryland.

Blanks are enclosed for you to submit the credentials for council members of your organization.

Very truly yours,

C. E. WISE, JR., *Secretary,*
Maryland Agricultural Society.

CEW:MD
Enc.

Chairman Linton of the Credentials Committee certified the Council members present and a quorum was declared:

Members of Council Present: Allegany—R. C. Wilson, C. J. White; *Anne Arundel*—O. F. Grimes, Edward P. Jones, Frank Wimmer, Jr.; *Baltimore*—F. Ridgely Todd, T. A. Mann, E. Ross Pearce; *Calvert*—J. Ellis Bowen, Julius Parran, Julius Bowen; *Caroline*—Richard Blackburn, Clarence Jones, F. D. Zeigler; *Carroll*—J. S. Bushey, W. A. Myers, J. L. Hersh; *Cecil*—D. B. McDowell, R. H. Baker, Gwynn Goodman; *Charles*—S. C. Linton, D. Mattingly, A. Starkweather; *Dorchester*—Earle R. Keene; *Frederick*—A. M. Etzler, Russell C. Thomas, J. Gilmore Garst; *Garrett*—Wm. Winterburg, Charley B. Miller, Dorsey Guard; *Harford*—Fred C. Jones, Thos. R. Brookes, A. G. Ensor; *Howard*—H. Roby Mullinix, G. Thomas Clarke, H. Jones Baker; *Kent*—H. S. Leaverton, Frank Sutton, Norman Ford; *Montgomery*—J. D. King, Ulysses Griffith, J. W. Jones; *Prince George's*—W. R. C. Connick, Wm. E. Duvall, J. E. Hogue; *Queen Anne's*—Merton R. Shawn, Noah Skinner, Casper T. Seney; *St. Mary's*—Grenville Lewis, Frank D. Hayden, Joseph H. Crew; *Somerset*—Wm. T. Chaffey, J. Miles Lankford, Robert Chamberlain; *Talbot*—Francis G. Shillinger, T. C. Schwaninger, A. F. Sweitzer; *Washington*—R. C. F. Weagley, Amos Reeder, I. N. Spielman; *Wicomico*

—C. C. Phillips, Algie Wimbrow, W. S. Parker; *Worcester*—W. P. Evans, Albert Dickerson, Preston Jones; *Hillsboro-Queen Anne Cooperative Corporation*—Edwin Warfield, Jr., Charles I. Boyle; *Maryland Ayrshire Breeders' Association*—A. I. Bell; *Maryland Cooperative Milk Producers, Inc.*—R. W. Shermantine, Wilson A. Heaps, R. G. Spoerlein; *Maryland State Horticulture Association*—G. Rust Canby, Henry C. Whiteford; *Maryland Stockmen's Association*—J. Herbert Snyder, John B. Muncaster; *Maryland Tobacco Growers Association*—O. A. Sansbury, Russell Cross; *Maryland Vegetable Growers' Association*—F. Ridgely Todd, C. E. Hammond; *Maryland State Poultry Council*—Harry Rieck, Mrs. Roberts, Mr. Snoddy.

The Secretary read the minutes of the meeting January 13, 1939. Mr. Linton moved that the minutes be approved, and upon second, the motion was carried.

Chairman Turner then called for nominations for officers for 1940.

H. H. Nuttle moved that the present officers be nominated and that nominations be closed. This motion was carried and the secretary of the meeting was instructed to cast a unanimous ballot for P. C. Turner as president, C. C. Phillips, as vice-president, C. E. Wise, Jr., as secretary, and T. B. Symons, as treasurer.

Dr. Symons then presented the financial report. Moved by Mr. Linton, seconded by Mr. McDowell, carried, that the report be accepted and filed.

DR. SYMONS: No one has said anything about the past convention, but I want to say now that I think it is the very best convention the Maryland Farm Bureau has ever held.

MR. TURNER: Speaking for the officers as a whole, we appreciate those kind words.

Motion duly made, seconded and carried that the meeting adjourn.

Same adjourned at 12:35.

MARYLAND AGRICULTURAL SOCIETY—MARYLAND FARM BUREAU FEDERATION

FINANCIAL STATEMENT FOR FISCAL YEAR 1938-1939

Appropriation for 1938-1939 ..... $3,350.00

Expenditures:

Date	Payee	Classification	Expended
1938			
Oct. 31	Md. Farm Bureau, Inc.	Rent (Oct.)	$ 53.33
Nov. 10	W. L, Strausbaugh	Travel (Speak. Contest)	3.00
10	L. W. Shepherd	Community Ex. (So. Md. Horse Show)	25.00
10	Md. Farm Bureau, Inc.	Rent (Nov.)	53.33
18	J. P. Brown	Community Ex. (Wicomico Co.)	25.00
18	J. B. Morsell	Community Ex. (Calvert Co.)	25.00
Dec. 5	R. S. Brown	Community Ex. (Talbot Co.)	25.00
5	Md. Farm Bureau, Inc.	Rent (Dec.)	53.33
23	Paul D. Brown	Community Ex. (Charles Co.)	50.00
23	H. B. Derrick	Community Ex. (Baltimore Co.)	12.50
23	H. R. Shoemaker	Community Ex. (Frederick Co.)	25.00
1939			
Jan. 23	Maurice Leeser Co.	Printing (Programs Annual Meeting)	38.00
23	M. L. Bobb	Travel (State Horticulture Meeting)	32.30
23	L. R. Detjen	Travel (State Horticulture Meeting)	4.30
23	R. S. Marsh	Travel (State Horticulture Meeting)	15.80
23	L. A. Stearns	Travel (State Horticulture Meeting)	7.65
23	W. J. Welday	Travel (State Horticulture Meeting)	30.64
23	L. C. Burns	Travel (Louisiana-American Farm Bureau)	90.88
23	Mossie G. Bayless	Travel (Baltimore Annual Meeting)	6.00
23	K. G. Connolly	Travel (Baltimore Annual Meeting)	6.50

Date	Payee	Classification		Expended
	23—Minnie M. Fyffe	Travel (Baltimore Annual Meeting)		8.60
	23—Albin Kuhn	Travel (Baltimore Annual Meeting)		5.25
	23—Evelyn Ramey	Travel (Baltimore Annual Meeting)		4.45
	23—Karl F. Reiblich	Travel (Baltimore Annual Meeting)		4.30
	23—Mary B. Woodson	Travel (Baltimore Annual Meeting)		4.60
	23—Traeger Displays	Community Ex. (Signs Annual Meeting)		33.00
	23—H. M. Carroll	Community Ex. (Harford Co.)		25.00
	23—Manville E. Coblentz	Community Ex. (Washington Co.)		15.00
	23—Harold A. Remsberg	Community Ex. (Washington Co.)		15.00
	23—Hillard Shank	Community Ex. (Washington Co.)		15.00
Feb.	3—C. H. Mahoney	Travel (Baltimore Annual Meeting)		3.95
	3—Peninsula Hort. Society	Printing (Annual Reports)	$100	
	3—Peninsula Hort. Society	Community Ex. (Fruit Ex.)	250	350.00
	3—Railway Express	Other Expenses (Express)		.36
	3—Henrietta D. Stonestreet	Other Expenses (Reporting Annual Meeting)		75.00
	3—Md. Farm Bureau, Inc.	Rent (Jan.)		53.33
	16—Geo. L. Schuster	Travel (Baltimore Annual Meeting)	$5.50	
	16—P. G. Stromberg	Other Expenses (Services Annual Meeting)	25.00	30.50
	16—John H. Carter	Other Expenses (Pub. Annual Meeting)		75.00
	16—Malcolm J. Henesy	Community Ex. (Garrett Co.)		43.75
	16—Anna Trentham	Community Ex. (Washington Co.)		15.00
	16—Md. Farm Bureau, Inc.	Community Ex. (Baltimore Co.)		12.50
		Rent (Feb.)		53.33

Date 1939			
Mar. 17	Reese Press	Printing (Grange Annual Report)	262.50
17	Geary Eppley	Travel (Judging Exhibit)	5.80
17	Margaret T. Johnson	Communication (Postage)	75.00
17	Railway Express	Other Expenses (Express)	.36
17	Md. Farm Bureau, Inc.	Rent (Mar.)	53.33
Apr. 1	Railway Express	Other Expenses (Express)	.36
27	Md. Farm Bureau, Inc.	Rent (April)	53.33
May 31	Md. Farm Bureau, Inc.	Rent (May)	53.33
June 16	Railway Express	Other Expenses (Express)	.50
16	Md. Farm Bureau, Inc.	Rent (June)	53.33
July 6	Allen G. Waller	Travel (Baltimore Annual Meeting)	17.85
6	T. B. Symons	Travel (Richmond, Southern States Coop.)	7.05
6	Md. Farm Bureau, Inc.	Rent (July)	53.33
Aug. 14	Md. Farm Bureau, Inc.	Rent (Aug.)	53.33
Sept. 11	20th Century Printing Co.	Printing (Annual Reports)	1,181.75
15	Md. Farm Bureau, Inc.	Rent (Sept.)	53.37
		Total Appropriations	$3,350.00

This account is audited by the State Auditor.

MINUTES

OF THE

SECOND ANNUAL MEETING

OF THE

House of Delegates of the Associated Women

OF THE

Maryland Farm Bureau, Inc.

January 10, 1940

The second annual meeting of the House of Delegates of the Associated Women of the Maryland Farm Bureau, Inc., was called to order by the President, Mrs. Edwin D. Fry of Montgomery County, in the Florentine Room of the Lord Baltimore Hotel, January 10, 1940 at 10 A. M. The meeting was opened with the singing of "America" by the group, with Mrs. Christopher Wood of Baltimore County at the piano. This was followed by devotional by Mrs. F. B. Knighton of Anne Arundel County.

The minutes of the last annual meeting were read, approved and adopted. The roll was called of the delegates from the counties by Mrs. Maurice D. Coblentz of Frederick County, chairman on credentials. Thirty-three delegates responded with seven counties not represented.

Nominations for directors from the six districts were made by the delegates from said districts and, there being no nominations from the floor, a motion was made by Mrs. Hopkins of Talbot County and seconded that the nominations be closed. This motion was carried.

A motion was made, seconded and passed that the nominations be accepted and the ballot was cast by the secretary.

The following directors were elected:

District No. 1—Mrs. Harry L. Davis.....Frederick County
District No. 2—Mrs. Guy Carlisle .....Carroll County
District No. 3—Mrs. F. D. Hayden.....St. Mary's County
District No. 4—Mrs. Christopher Wood .....Baltimore County
District No. 5—Mrs. Algernon Carter .....Queen Anne's County
District No. 6—Mrs. C. C. Phillips.....Wicomico County

The six directors then withdrew to make out the ballot of the new officers. While this was being done, Mrs. Fry called for reports of the delegates from the counties. These reports were both interesting and encouraging. The report of the Directors meeting was then made by the Chairman, Mrs. Harry L. Davis. The following ballot was presented.

President—Mrs. Edwin D. Fry.....Montgomery County
Vice-President—Mrs. C. C. Phillips.....Wicomico County
Secretary—Mrs. Harry L. Davis.....Frederick County

Nominations from the floor were called for, but as there were none, a motion was made by Mrs. Hopkins and seconded that officers nominated by the directors be accepted. This was carried. These officers served for 1939 and were unanimously nominated and re-elected and the Secretary cast the ballot.

Mr. P. C. Turner, President of the Maryland Farm Bureau, Inc., came in at this time and gave words of encouragement. Mrs. Fry then called for nominations from the House of Delegates for six voting delegates to sit in the business session of the Maryland Farm Bureau, Inc., on Friday morning.

The following were nominated and elected:

District No. 1—Mrs. Ira Downey .....Washington County
District No. 2—Mrs. Guy Carlisle .....Carroll County
District No. 3—Mrs. F. D. Hayden .....St. Mary's County
District No. 4—Mrs. Altee Armour .....Cecil County
District No. 5—Mrs. C. J. Kern.....Caroline County
District No. 6—Mrs. Francis Grosscup .....Dorchester County

Resolutions Nos. 23, 34 and 35, as presented by the Resolution Committee of the Maryland Farm Bureau, Inc., for 1940 were read and adopted.

Mrs. Roy C. F. Weagley, Secretary of the Associated Women, A.F.B.F., gave a report of her activities from January 10, 1939, to January 10, 1940. They are as follows: In February attended the Executive Committee of the National Council for Mothers and Babies in Washington, D. C. Plans were completed for the exchange of information between the 58 constituent national organizations.

With President O'Neal, appeared in a hearing, March 2, before the U. S. Senate Committee on Education and Labor in favor of Federal aid to education in rural areas. Was one of the 25 rural homemakers who, with 25 urban women, accepted the invitation of Secretary Wallace to attend a two-day conference, April 13 and 14, in Washington, D. C., to discuss economic problems peculiar to each and every group represented.

On May 27, represented Maryland Agriculture in the first All-Maryland Health Conference, held in the School of Hygiene, Baltimore, where 350 delegates represented more than 100 organizations. Participated in

the program by giving a 15-minute talk. The outgrowth of this conference was the Maryland Health Congress.

Attended the Northeast Regional Farm Bureau Conference in New York City, June 30 and July 1. Although the attendance was not large, the program was unusually fine.

Addressed a group of more than 400 Lancaster County Society of Pennsylvania Farm Women on July 29 at Lititz, Pennsylvania.

On August 24th assisted with the County Picnic, which was sponsored by the Farm Bureau, the Grange and the Homemaker Clubs.

The Board of Directors of the Associated Women of the A. F. B. F. met in the Stevens Hotel, Chicago, September 10-13, to complete plans for the annual meeting to be held there December 3-8.

Attended the meeting of the Associated Women of the A. F. B. F., which met in the Stevens Hotel, Chicago, December 3-8. Mrs. Weagley was re-elected Secretary of the Associated Women of the A. F. B. F. at this meeting.

Miss Venia M. Kellar, Assistant Director of Extension, brought greetings from the State Council of Homemakers. Miss Kellar also spoke of the Land Planning Groups sponsored by the Extension Service. She said she thought they should have been called "Home and Farm" groups.

Mrs. Fry, our President, gave a brief but interesting report of the annual meeting of the Associated Women of the A. F. B. F. which met in the Stevens Hotel, Chicago, December 3-8.

The meeting then adjourned until 12:30.

During the luncheon, which was served to the voting delegates in the Florentine room, the following questions were discussed.

1. By what method or plan of procedure can the Associated Women of the Maryland Farm Bureau, Inc., become more valuable to the Maryland Farm Bureau, Inc., as an associate organization? Do we gain or lose by holding our meetings separately, or at the same time as The Maryland Farm Bureau, Inc.?

2. How best can we interest Farm Bureau women enough to want a strong county organization of Associated Women and then to work to bring it about?

Can you give reasons for organizing into such groups where Homemakers' Clubs are well established? Do you feel that both groups might benefit mutually?

Summary of last part of question No. 1: We lose.

Summary of second part of question No. 2: We feel that there should be organized groups of farm women to help further the cause of Farm Bureau work in the counties, state, and nation. Summary of last part of question No. 2: Yes.

The afternoon meeting of the Associated Women of the Maryland Farm Bureau, Inc., was called to order by the President, Mrs. Fry.

The first speaker on the program was Miss Dorothy Emerson of the University of Maryland, State leader in 4-H Club work for girls. She brought greetings from the University and she spoke of her work with

the 4-H girls. Miss Emerson presented two 4-H girls, who also gave short talks, on what the 4-H club work meant to them. One told, after having attended Club Week at the University of Maryland, she wanted to go to college. She did get one year at the University and then through the illness of her mother she couldn't finish her college course, but she had been compensated through becoming a club leader and that she was now very happy.

The other also spoke of what the work in 4-H Clubs had done for her. She was one of the girls who attained a scholarship for club week at the University of Maryland for 1939. Five were given by the Associated Women of the Maryland Farm Bureau, Inc.

Ruth thanked the group for making it possible for her and the others who attained the scholarships to attend "Club Week."

Mr. Ephraim Zimmerman and daughter of Frederick County gave several vocal duets. Miss Zimmerman was the accompanist on the piano-accordion. Their selections were: "God Bless America" and "Whispering Hope." Miss Zimmerman also gave several instrumental selections.

Mrs. Fry then presented Mrs. Harvey W. Wiley, Chairman of National Woman's Party, who spoke on "Equal Rights Amendment."

DEMOCRACY FOR WOMEN

MRS. HARVEY W. WILEY

It is a great pleasure for me to be here today. I have spent 15 summers on a farm in Virginia and now own the farm which Dr. Wiley loved so much, 1,000 acres in Loudon County, Virginia.

I noted in the papers yesterday that this year marks the 25th anniversary of the founding of the Agricultural Extension Service, a service which has been of such tremendous service to agriculture. In the Extension Division News of the Virginia Agricultural College, the statement is made:

> "During the last 25 years the Agricultural Extension Service has achieved one of the greatest educational accomplishments that has ever been achieved at any time or at any place in the history of mankind."

This statement was made by the Undersecretary of Agriculture, Mr. M. L. Wilson. I have no doubt that it is all true. Many new methods and new ideas have been launched in those 25 years to make the lives of the men and women on farms easier and pleasanter. But I had my experience 28 years ago. I was in the real horse and buggy days and had to drive a one-horse buggy 4½ miles to the nearest town when we needed supplies. I am so glad that I had those pioneer experiences. They make the easier methods of today all the sweeter, remembering the difficulties we had then.

My topic is "Democracy for Women." The dictionary defines "Democracy as that political system in which government is directly exercised

or controlled by the people collectively." That is to say that a woman's point of view should be expressed in a democracy, as well as the man's.

We know that the subject of equality has been in the thoughts of men for almost as long as there is a written record of mankind. Two thousand years ago, Plato, in his *Republic*, proposed for his ideal state a guardian class, in which there should be no sex barrier. He insists that division of labor must be by aptitude and ability and not by sex. His words are:

> "In the administration of a state, neither a woman as a woman nor a man as a man has any special function; but the gifts of nature are equally diffused in both sexes."

In a book on "True and False Democracy" Dr. Nicholas Murray Butler, in 1907, wrote:

> "Jealousy of power honestly gained and justly exercised, envy of attainment or of possession, are characteristics of the mob, not of the people, of a *democracy which is false*, not of a *democracy which is true*. *False democracy* shouts, every man down to the level of the average. *True democracy* cries, all men up to the heights of their fullest capacity for service and achievement. The two sides are everlastingly at war. The future of this nation as the future of the world is bound up with the hope of a true democracy which builds itself on liberty."

I think that a very fine statement. The National Woman's Party seeks to give every woman a chance to rise to her fullest capacity for service and achievement, by giving her equality of constitutional status, which will compel equality in state laws and which will thus bring about economic equality between men and women.

This has been a man's world for a long time. Women for centuries have been completely occupied in the home, engaged in the nurture of children, the preparation of food, care of the sick, and the manufacture of all the articles used in the home.

Home-making and the nurture of children will ever be the great job of women, but the iron-horse of machinery and preventive medicine have now combined to free them from many of their ancient tasks. The changing economic life of today makes it impossible for one man to be the sole support of innumerable women relatives, including wife and mother, daughters, sisters and aunts. There is not enough for such a female host to do, nor is the modern home large enough to accommodate so many. Hence, today the unmarried woman must support herself and the married women too, very often. According to the Census of 1930, over ten million women were gainfully employed, outside the home, of whom three million and a half were married.

The disabilities under which woman suffers in her effort to earn her living are of two kinds. One class of disabilities is derived from

the English Common Law and the other is the result of the so-called protective legislation of modern times.

The Common Law disabilities being the older of the two have in a way furnished the background for the later legislation. They have perpetuated the mental attitude which made the protective legislation possible. There are around 60 forms of discriminations embodied in many hundreds of laws in the 48 states, against women. Examples are unequal guardianship of children, unequal inheritance laws, unequal divorce laws, ownership of the wife's services, in the home by the husband, legal disabilities limiting the power of a married woman to contract and carry on a business; inability of women to serve on juries, inability to hold high public office; and the so-called protective laws.

Common law is not law passed originally by a legislature or written into a constitution, but law based on the custom of the people and first embodied in royal decrees and in judges decisions. If then it grew out of the actual custom of the people what foundation could be more solid and why is it not applicable in a satisfactory way today?

The answer to this question is because the ideas of the 12th century are not applicable to the needs of the 20th century. The English Common law crystalized or took form in the 12th century, in the very heart of the Middle Ages. In the 12th century more than half of the people were in a condition of serfdom, bound to the land, bought and sold with the land, each man owing three or four days of labor each week to his Lord, besides other services and dues.

Religion played a predominant part in the 12th century. It was the century of the Crusades. Perhaps the two most dominant characteristics of medieval thinking were the reliance upon authority and the conception of society and social customs as *fixed* and *unchanging*.

Today we realize that the law of life is the law of change. All things change and come to their end in due time. Though we may regret change—even abhor it sometimes—it is inexorable. The entire universe is changing with every quiver of the eyelash and nothing is permanent in the eternal flux of things.

And so we cannot stand still in this life. We have got to go either forward or backward. Oliver Wendell Holmes said, "I find the great thing in this world is not so much where we stand, as in what direction we are moving."

In the 12th century the life of woman was much the same in its fundamental aspects, whether she lived in a castle, a convent, or a peasant's hut. Everything used in the home was made there. Chief of all her home duties was spinning and weaving. There was little ownership of property, in the modern sense, outside the cities in the Middle Ages. Land was the chief form of property and for it a man had to do homage and fight for his lord, when called upon. A woman could not do this and was already occupied, so she could not hold a fief as a man did. If she inherited one it was important for her to find a husband to defend it and do homage for it. Since she could not hold land, the

chief form of property, it seemed logical that she should not own property in any sense. The destiny of her sons was to become fighting men and her daughters to be given in marriage to fighting husbands by a fighting father. So her children were considered as belonging to the father. The wife had no control over them whatsoever.

We have a remnant of this old idea today in the state of *Georgia*, where the father may by *will* appoint guardians for the persons or property, or both, of his children. The mother is entitled to the possession of the child until his arrival at school age, when the guardian takes possession of him. This is a hold-over from the time of Charles 2nd. Many other states had this archaic law, including Maryland, until 1929. The agitation of the National Woman's Party led to the change in many states. In some states, as for instance *Alabama*, the common law prevails and the father is entitled to the child's earnings. He is also given preference for appointment as a guardian for his minor child having an estate in his own right. Some states have gone part way, as for instance New York and Michigan, making the mother a guardian with the father, but still leaving the economic rights with the father.

As already stated the English Common law is based upon the decisions of the judges kept since the middle of the 12th century. Sir William Blackstone in 1765 published his Commentaries on the Law of England. The impression gained from reading Blackstone is that the laws creating disabilities for married woman are for her protection and benefit. He says in one place that a man might beat his wife provided the rod is no bigger than a man's thumb, and he speaks of the married woman as a great favorite under the law. The hang-over from the ancient Common law, which still is operative unless there is a specific statute to the contrary, exists in many states in the form of legal disabilities for married women limiting their power to contract or to carry on a business, the inferior rights of mothers to those of fathers, the unfair inheritance laws, the lack of power over their property accorded to married women in many states, the fact that in one state the husband still has the right to his wife's earnings, etc.

To understand the so-called protective laws we have to take another glance into the past. The factory system was introduced into this country in 1790. Though its development was fairly rapid, this country was not in the grip of the Industrial Revolution until after the Civil War. What was the effect of this development in the lives of women? Their handiwork was soon supplanted by the product of the mills. The movement to the cities meant smaller houses and the dependence of the family upon a wage.

Idle women were shamed by the newspapers and urged to enter factories. Every inducement was made also to bring the farmer's daughter into the mills. Dormitories with matrons were provided and other assurances of a life advertised as safe and attractive. In 1848 the N. Y. *Times* was urging women to go into clerking, as that was an occupation for which they were particularly well fitted. They went, and from

there into many other occupations, urged by the necessity of making a living, and the pressure of public opinion.

What was the inevitable result? Everywhere women met the restraining hand of the English Common Law. Single women at that time could own property but married women could only hold the bare legal titles to lands. The husbands were entitled to the profits, rents, produce, etc. The personal property of wives became the absolute property of husbands. Beginning in 1839, Mississippi started changing the laws with reference to the property of married women, other states followed suit. The change began in the District of Columbia in 1869 and was completed recently.

Women began to ask: "Why should not we control our wages? Why not have control over our children, whom we are supporting with the work of our hands? Why not own our own labor in the home since we are capable of earning our living outside the home? Why cannot we enter schools and colleges and why should not the professions be open to us?

It seemed to these women that the way to remove these discriminations was by securing the suffrage. It took 62 years to secure complete manhood suffrage ending in 1854 and beginning way back in 1848 when the first Equal Rights convention was held; it took 72 years for women to gain the right to vote throughout the country.

Oddly enough the year 1848, when the N. Y. *Times* was urging women to go into clerking, was also the year of the first great immigration to this country, which began as the result of the potato famine in Ireland and the failure of the democratic revolution in Germany. The labor market became comparatively crowded and it was decided in certain quarters that it was bad for the health and morals of women to work in factories. It was also recalled that woman's place was in the home, though starvation might now await her there. Two or three years after the great migration to the United States took place the first labor restriction applying to women *only* was put into effect in Ohio in 1852, by a mechanic's association.

Protective legislation for women in industry has been on the increase since the Civil War and especially during the last 50 years. When women went into industry, they worked under unsanitary conditions and for long hours. For that matter men worked under frightful conditions at that time, too. Men organized and bargained for better wages. Women, unfortunately, did not organize in large numbers and special legislation for them was obtained on the advice and with the aid of social service workers and men's labor organizations. In those days, when women were finding their way into industry and business, and were not considered as permanent workers, special legislation may have been necessary. Today conditions have changed radically. Women are a permanent factor in our economic life. They are in industry for the same reason men are in industry and the right to bargain for their labor should be

as inviolate as a man's right to bargain for his labor. The right to work is an inalienable right, since upon it depends life itself.

Protective Laws

As a result of these so-called protective laws today there are 44 states in which the working day of women *only* is limited to a certain number of hours, in certain occupations, mostly industrial. (Alabama, Florida, Iowa, and West Virginia have no laws prescribing certain hours.) In 19 states, D. C., and Puerto Rico, there is some form of an 8-hour day. Eighteen states prohibit night work for women only, and 26 states, D. C., Alaska, and Puerto Rico, have operative minimum wage laws for women only.

The Woman's Party is not opposing protective laws, provided they apply to persons in industry and are not passed for women *only*. Laws requiring sanitary conditions for workers, or seats in stores, can and should be made to apply to all workers—men and women alike. That this can be done by law for men as well as women is abundantly proved by the Oregon 10-hour law for persons in mills and factories, which was upheld by the Supreme Court in 1916 (Bunting v. Oregon, 243 U. S. 426). Dr. Elizabeth Faulkner Baker of Columbia University said of this decision: "It would seem to be the crystallization of slowly accumulating conviction in favor of protective hour-laws for employees regardless of sex or age."

If a woman worker is entitled to protection in this day of stress and strain, noise and hurry, from over-fatigue, the injurious effect of night work and from work in dangerous poisons, then a man worker is entitled to the same protection. As far as the future of the race is concerned, potential fathers should be considered as well as potential mothers.

Biological Differences

Are there any biological differences between the sexes to warrant these laws? The late Dr. William A. White, for many years Director of St. Elizabeth's Hospital for the Insane, an internationally known medical man, when asked this question at our Headquarters, replied:

> "I think not. Health legislation, like all other legislation, I take it, is valuable in proportion to the stability of the foundation upon which it is erected. If it is based upon an accurate estimate of social conditions and undertakes to reach well defined and desirable ends by methods that are available and can be readily mobilized for that purpose, then such legislation is good, and much of the health legislation in past years has belonged to this class. . . . More recent legislation that has undertaken to discriminate between the sexes does not fall within this category. Its objectives are vague. It is not founded in accurate scientific knowledge. It deals with intangibles which are exceedingly difficult or impossible to define and its results are indefinite and in many instances they are obviously detrimental to one or both of the sexes. Under these circumstances

it would seem desirable to remove as far as possible handicaps to a free and open competition as between men and women to the end that natural adaptations will result in consequence. This becomes still more desirable when it is appreciated that prohibitive legislation of the sort which has been proposed, if it is not founded upon necessity and upon actually definite and clear-cut facts, is sterilizing in its results because it closes the door of opportunity.

"When we appreciate that each individual personality is absolutely unique, that in all probability there has never been anyone else in the world exactly like any existing person and that there never will be in the world again another person exactly his counterpart, we realize that each individual represents possibilities, actual and latent, which no one can foresee or predict and as with all living beings the actualization of such latent possibilities is dependent upon the exposure of the individual to appropriate stimuli. No one, therefore, unless it becomes absolutely essential, should have his opportunities impaired by refusing him the chance of certain occupations that might develop his latent possibilities."

Dear Elizabeth Cady Stanton, one of the three great pioneer women, whose statue is in the Crypt of the Capitol, said exactly the same thing as Dr. White, back in 1892, when she appeared before a Senate Hearing. Mrs. Stanton said:

"The isolation of every human soul and the necessity of self-dependence must give each individual the right to choose his own surroundings. The strongest reason for giving women all the opportunities for higher education, for the full development of her faculties, her forces of mind and body; for giving her the most enlarged freedom of thought and action; a complete emancipation from all forms of bondage, of custom, dependence, superstition; from all the crippling influences of fear—is the solitude and personal responsibility of her own individual life. The strongest reason why we ask for women a voice in the government under which she lives; in the religion she is asked to believe; equality in social life where she is the chief factor; a place in the trades and professions, where she may earn her bread, is because of her birthright to self-sovereignty; because as an individual she must rely on herself . . .

"We see reason sufficient in the outer conditions of human beings for individual liberty and development, but when we consider the self-dependence of every human soul, we see the need of courage, judgment, and the exercise of every faculty of mind and body, strengthened and developed by use, in woman as well as man . . ."

A beautiful and wonderful speech.

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One reason for our difficulties is because women are not included in the Constitution. In the 150 years of our Constitutional history the Supreme Court has decided six times that the Constitution does not include women. Once, in 1869, when Mrs. Myra Bradwell petitioned that she had a right to be a lawyer; again in 1892, when Mrs. Virginia Minor sought to vote; in 1915 when Mrs. Gordon Mackenzie sought to prevent loss of her nationality upon marriage to a British subject; in 1924, a case brought in Buffalo, New York, by Anna Achmidt, who claimed her right to work after ten o'clock at night. She was told that the right to freedom of contract did not belong to her, as it would have to a male citizen; and in 1931 when Genevieve Welosky claimed the right in Massachusetts to have trial by a jury which included her peers. In each one of these five cases the Constitution of the U. S., through the decision made by the Supreme Court, failed to give to women the equal protection of the law.

The sixth case was the Minimum Wage cases of 1923, 1936, and 1937. On March 14, 1923, a more modern view was held in the Adkins v. Children's Hospital, when it was held to be unconstitutional to fix a minimum wage law for women, the Court saying: "We cannot accept the doctrine that women of mature age, sui juris, require or may be subjected to restrictions under their liberty of contract which could not lawfully be imposed in the case of men under similar circumstances." The woman in this case was an elevator operator. The Court of Appeals of the D. C. frankly said:

> "The hotel manager was not compelled to employ her at a fixed wage and her position went to a man, who was willing to perform the service at a lower wage than that fixed by the board—the law to promote the good morals and general welfare of the community cast her adrift." (Childrens Hospital v. Adkins and Lyons v. Adkins, 284 Fed. 613, 1922. Affirmed 261 U. S. 525, 1923.)

Mr. Justice Sutherland of the Supreme Court, in writing his opinion for a bare majority of the Supreme Court, 5 to 4, said:

> "In view of the great—not to say revolutionary—changes which have taken place . . . in the contractural, political and civil status of women, culminating in the Nineteenth Amendment, it is not unreasonable to say that these differences (i. e. between men and women) have come almost, if not quite to the vanishing point."

On June 1, 1936, the Supreme Court in a 5 to 4 majority opinion reaffirmed its stand of 1923 and spoke in defense of the rights of American women. Mr. Justice Butler writing the decision said:

> "Prescribing of minimum wages for women alone would unreasonably restrain them in competition with men and tend arbitrarily to deprive them of employment and a fair chance to find work."

"While men are left free to fix their wages by agreement with employers, it would be fanciful to suppose that the regulation of women's wages would be useful to prevent or lessen the evils . . ."

But on March 29, 1937, through the switch of Justice Owen Roberts the Supreme Court reversed itself on the constitutionality of minimum wage legislation discriminating against women. This decision establishes the unsound doctrine that while men may work for any compensation they please, women cannot work except for wages at or above a level fixed by legislatures or governmental boards or agencies. Moreover, it assumes that the liberty of women is not as precious as the liberty of men.

If there could be any good in this reversal of its previous stand the only thing is to show the need for the Equal Rights Amendment.

In closing let me say that women have been supine too long. They have failed to unite and coordinate their power as they should, not only for their own protection but in order that the principles for which women stand may be embodied in our civilization. What kind of civilization is that that we have, in which men and women have to be at each other's throats? If we wish to alter this situation, we cannot take action at a moment of crisis. We must organize and work persistently now. The race only advances by the extra achievements of the individual. Are you the individual?

Mrs. Wiley owns and operates a thousand acres of land in Virginia and knows some of the problems that confront the farm women.

Mrs. Fry then told us of the "Slogan" of the Associated "Women of the World": "A Million Members for Peace." Each Associate member of the Associated Women of the World is asked to give a penny toward a fund so their organization would have more money to work toward peace, as they do not have any other way of making money. Mrs. Fry also stated that their penny meant two pennies in our money.

There being no further business, the meeting adjourned to meet again at the call of the President.

Respectfully submitted,

(signed) FLORIDA M. DAVIS, Secretary.
(Mrs. Harry L. Davis)

MINUTES
OF
SECOND ANNUAL CONFERENCE
OF
Maryland Council of 4-H Clubs
January 10, 1940

The semi-annual meeting of the Maryland Council of 4-H Clubs was held at the Lord Baltimore Hotel, Baltimore, Maryland, Wednesday morning, January 10, 1940. The meeting was called to order by President William Shumaker, Allegany County.

In the absence of the secretary, Elizabeth Cissel Kuhn, Prince Georges County, Dorothy Fouche, Frederick County, was appointed secretary for the meeting.

The minutes of the August meeting and the December Board meeting were read and approved.

The following twelve counties sent delegates to the meeting:

Allegany	Frederick	Prince Georges
Baltimore	Harford	Washington
Caroline	Howard	Talbot
Carroll	Montgomery	Wicomico

The treasurer's report showed a balance on hand of $28.00. A bill of $7.70 for official stationery and luncheon tickets was presented by Mylo Downey. A motion was passed that the bill be paid.

Announcement of the Tri-State Conference to be held in Frederick County in the spring was made by Dorothy Fouche.

A highway safety program to be carried on by 4-H Clubs was presented by Paul Nystrom of the Extension Service. A motion was passed to adopt the Safety Program as a 4-H Council project for 1940 and that a definite program be prepared by the State Leaders and Official Board.

A motion was passed that Dorothy Fouche, Frederick County, and Herbert Hoopes, Harford County, be added to the Official Board.

A discussion on the advisability of sponsoring another World's Fair 4-H tour was led by Mylo Downey. No definite plans were made, but the consensus of opinion seemed to favor such a tour.

Dr. T. B. Symons, Director of Extension Service, brought a message of "Looking Ahead." He spoke with appreciation of the achievements and honors won by Maryland 4-H boys on judging and demonstration

teams in national contests. With a personal illustration from his boyhood, he emphasized the value of having a definite goal to work toward. He pointed out the need of Senior Councils having a definite program.

Miss Venia M. Kellar, Assistant Director of Extension Service, gave an inspiring talk on the same topic impressing on everyone that "there is no substitute for hard work. You have to work hard in any vocation."

A panel discussion on "Highlights of 1939 4-H Senior Council Programs" was led by Herbert Hoopes, Harford County. The purpose of the discussion was to assist council members in planning their 1940 programs. Topics and activities suggested were:

(1) County Government.
(2) Highway safety.
(3) County camps.
(4) Sailing.
(5) Skating party.
(6) Straw-ride (to visit other councils).
(7) Music appreciation.
(8) Photography.
(9) Furniture refinishing.

The meeting stood in recess until 1 P. M. at the Y. W. C. A.

The afternoon session of the Maryland Council of 4-H Clubs opened at 1 P. M. with Vice-President Raymond Mueller of Talbot County presiding.

A report of the annual meeting of the American Country Life Association was given by Dorothy Fouche. She said in part:

The American Country Life Association is made up of Land Grant Colleges and other organizations and institutions interested in country life. It is an organization of all types of rural organizations. The Youth Section aims to promote discussion of rural life problems, to disseminate information for a better understanding and appreciation of country life, and to work for improvement in rural areas.

More than 200 young people from 22 states attended the 1939 meeting at Pennsylvania State College. They participated in group discussions, program help sessions, exhibits showing local group activity, folk dancing and game demonstrations. The theme of the conference was "What's Ahead for Rural America?" Special features included a drama festival and an art exhibit of paintings by rural artists. Important benefits of the meeting were (1) Acquiring new ideas; (2) Making new friends; and, (3) Giving one a broader vision.

Members were encouraged to attend the 1940 conference to be held at Purdue University in Indiana in the fall.

M. M. Chambers of the American Youth Commission addressed the group on the subject "Maryland Youth Tells Its Story." Mr. Chambers reported on the recent survey of Maryland youth made by the Com-

mission. The survey included employment, health, education, home life and other vital questions. Some of the present conditions as shown by the questionnaire were: (1) Most youth leave school for economic reasons; (2) Less than one-half of the unemployed are registered with an employment service; (3) The number of rural youth who receive regular medical and dental care is very low; (4) Most rural homes do not have modern conveniences; (5) Farm youth do not use libraries.

Results of the survey led the Commission to make recommendations for solving some of the outstanding problems of modern youth.

Recently the Commission issued a statement relative to the extreme need for work for all youth, copies of which were distributed. This statement has aroused the interest of Congress and of youth serving agencies everywhere. President Roosevelt and Mrs. Roosevelt have strongly endorsed the principles. Mr. Chambers emphasized the need, as stated in the last paragraph of the condensation of the statement appearing in the December Bulletin issued by the Commission.

"The Commission feels obliged to emphasize the fact that, whether in war or at peace, any nation interested in self-preservation must see to it that the young have a proper chance to grow into useful citizens. In past generations, this country provided opportunity for young people by acquiring vast areas of vacant land in which they could settle. The obligation to provide opportunity for youth has become imperative today because it is not being met by the conditions of private and public employment as they exist."

The meeting was closed with a most challenging and inspirational message by E. G. Jenkins (Daddy Jenks).

DOROTHY FOUCHE, Acting Secretary.

PROCEEDINGS

OF THE

FORTY-SECOND ANNUAL MEETING

Maryland State Horticultural Society

Y. M. C. A. Auditorium, Hagerstown, Maryland

January 4th and 5th, 1940

President G. William Gardenhour called the meeting to order at 10:45 A. M. and the invocation was delivered by Reverend Scott R. Wagner, Pastor, Zion Reformed Church, Hagerstown.

Mr. Henry Holzapfel, Jr., gave a cordial address of welcome to the Society.

The President called for the report of the Secretary-Treasurer.

REPORT OF THE SECRETARY

A. F. VIERHELLER
College Park, Maryland

It will be remembered that last year the Society passed resolutions thanking Secretary Henry A. Wallace for reducing the lead and fluorine tolerance in apple spray residue, and asking further study in the toxic properties of spray residues; opposing the Patman Bill to tax chain stores; and conferring Honorary Life Memberships upon Mr. Arthur Lee Towson and Mr. Edmund P. Cohill. These matters were taken care of by your secretary, through proper channels. The Society also joined The American Pomological Society as a gesture of assistance in their fine work affecting the fruit industry. Your secretary also attended a conference in Washington with representatives from the Virginia and West Virginia Horticultural Societies in an effort to have apple by-products given a prominent place in the work of the U. S. Regional Laboratory recently established near Philadelphia. We have received excellent cooperation in this matter from Dr. Knight and his associates in the U. S. Bureau of Chemistry and Soils. Working with the other Horticultural Societies and the International Apple Association, we contacted our Senators and Congressmen in amendment of the Wage-Hour Bill, and in the hearing on the Maryland Wage-Hour Bill, our president, Mr. Gardenhour, gave an excellent presentation of the case as it affected fruit growers. General correspondence and matters of legislation were handled in

cooperation with Eastern Apple Growers' Council, National Apple Institute and Appalachian Apples, Inc.

Our growers are cooperating fairly well with Appalachian Apples, Inc., a grower-controlled apple advertising plan. Last February, this organization staged a successful Apple Week in Baltimore and Annapolis. Thirty-nine stores entered the apple window display contest, the prizes being furnished by Baltimore Fruit and Produce Association and apple sales were greatly increased. Your secretary judged these displays.

Your secretary has conducted the Annual Apple Display in Baltimore, the premiums being paid by Maryland State Fair Board. This display is sponsored by the Society and is visited by hundreds of consumers who seem amazed that Maryland can produce such excellent fruit.

Our summer meeting at Hancock was an excellent affair. We were hosts to the Pennsylvania Horticultural Association on their summer tour. There was plenty to see, and Mr. R. S. Dillon and family provided a fine lunch for the entire crowd, numbering over 500. Our gratitude goes to the growers in that section for their fine hospitality.

Our thanks also go to the committee who have handled the Federal Surplus Commodity work during the past season, and to the officers and Executive Committee for their assistance during the year. Our monthly publication, *The Maryland Fruit Grower* is going along in good shape and our Society is becoming favorably known over the country. Remember our advertisers when you buy, and let's all give strong support to the Society.

REPORT OF THE TREASURER

A. F. VIERHELLER
College Park, Maryland

During the year your treasurer has handled $4,710.10, which included Appalachian Apples, Inc., funds and Maryland State Fair Board allotment, both of which were received and disbursed, in addition to the usual Society receipts from various sources. On December 1, 1939, there was a cash balance of $460.92 in checking account and $318.36 in savings account or a total of $779.28 on hand. The books of the Society are open for inspection and I ask that an Auditing Committee be appointed to examine the accounts.

PRESIDENT'S ADDRESS

G. WILLIAM GARDENHOUR
Smithsburg, Maryland

Members of The Maryland State Horticultural Society, Visitors from nearby States, Ladies and Gentlemen:

First let me review the accomplishments of the Society during the past year. With the aid of Mr. E. D. McCain and Mr. E. C. McFadden, your President has carried the fight against the Wage and Hour Bills

in your State Legislature as well as in Congress. Also your Secretary, Mr. Vierheller, has helped wherever possible along with other loyal members of this Society in this great fight. Let us not rest on our laurels for the fight has only begun and you see what weight organized labor exerts upon the representatives of both state and nation.

We have been hearing about production methods with better spraying, better packing, more bushels per tree, resulting in better fruit, and we have grown lopsided. What we need now is to urge our colleges, research bureaus and experiment stations to study better marketing methods, so we can obtain more per bushel, thus insuring us growers more profit for each bushel grown.

At this point let me urge every fruit and berry grower, whether large or small, to join this Society and help along, for it is for your benefit.

I want to take this opportunity to thank you for the honor which you have bestowed upon me during the past two years, electing me as your President, and I want to assure you I want to see the Society increase in number as the years come and go.

Whether I have deserved this great honor and privilege you have bestowed upon me, you can decide.

May the year begun bring you, fellow fruit-growers, greater prosperity than the one just closed, along with fewer headaches and a greater desire to pursue your chosen vocation.

ARE BORON AND POTASSIUM DEFICIENT IN OUR APPLE ORCHARDS?

L. P. Batjer, Pomologist, Bureau of Plant Industry,
U. S. Horticultural Station, Beltsville, Maryland.

In order for a fruit tree to be properly fed, it must receive an adequate supply of some 12 to 15 elements. From the soil must be supplied relatively large quantities of nitrogen, potassium, phosphorus, calcium, magnesium, as well as smaller amounts of manganese, iron, sulphur, zinc and boron. If a tree fails to receive the proper amount of any of these elements, the behavior of the tree usually reflects the shortage in reduced growth, yield, or some abnormality of one type or another.

It is very easy to demonstrate the effect of withholding any particular element on the growth of fruit trees. By growing a tree in pure quartz sand from which all plant food materials are lacking, it is possible to grow a luxuriant tree by watering the sand with a solution in which has been dissolved the necessary elements listed above in the form of pure chemical compounds. If one essential element is withheld from this solution the tree will soon exhibit the characteristic symptom associated with the absence of the particular element withheld. If the element lacking is supplied the plant will usually resume normal growth, but if permanently withheld, in most cases it will finally die even though it has access to abundant amounts of all other essential elements.

Our fruit soils in this section of the country are abundantly supplied with most of the necessary food materials needed for plant growth. Fortunately, we need not be concerned as far as the tree needs are concerned with most of these essential elements. As most of you know, nitrogen is most often lacking. It is, of course, present in our soils, but the available supply is not sufficient to maintain satisfactory growth and fruitfulness.

It is our purpose here to briefly discuss two essential elements—potassium and boron—with respect to the possibility of their being deficient in our fruit soils.

Boron

It has been only in recent years that boron has been recognized as being necessary for plant growth. A French worker about 1910 published results showing the necessity of boron for satisfactory growth of wheat, oats, and radishes when grown in sand culture. However, 20 years passed (1930) before it was demonstrated that boron might be so low under field conditions as to interfere with normal plant growth. A German worker found that a shortage of boron was the direct cause of heart rot of beets, turnips, and rutabagas. Later it was found that boron shortage was the underlying cause of browning of cauliflower and stem cracking of celery.

In 1934 a New Zealand experiment station reported that an internal breakdown disease of apples was corrected by applications of borax or boric acid to the soil. Following this work, British Columbia reported that a similar disease known as corky core or drought spot was corrected with applications of boron. In 1936 the U. S. Department of Agriculture started some experimental treatments in order to study what effect soil applications of different materials would have on a certain type of internal breakdown which occurred in the Potomac Basin district, particularly on varieties of the Ben Davis group.

As a result of these experiments it was found that an application of either borax or boric acid was completely effective in correcting this corky condition.

Internal cork, as it is generally referred to, is characterized by a browning deep in the flesh of the apple. In some varieties it may occur as well-defined areas close to the core of the fruit, but more generally is diffused throughout the flesh of the apple. Only when the fruit is very badly affected are surface markings evident. In such cases the apples have a roughened appearance. In most instances, however, the only external evidence of internal cork is a tendency of the affected fruit to color and drop earlier than normal.

Internal cork should not be confused with bitter pit or stippen, often called cork or York spot. This trouble is characterized by small, roundish, sunken areas with dark green centers beneath which are small, corky areas extending into the flesh of the fruit. This condition, so far as known, cannot be corrected by applications of boron.

Varieties most generally affected with internal cork are Gano, Ben Davis, Black Ben Davis, Yellow Transparent, and Oldenburg. It has been observed on Jonathan and Rome Beauty but is not generally prevalent. It is doubtful that applications of boron will prove beneficial unless internal cork is known to occur.

Applications may be made at the rate of one-third pound of borax per tree for trees under 15 years of age, one-half pound for trees 15 to 20 years of age, and one pound for trees 21 years of age and above. Two-thirds of the above amounts will suffice if boric acid is used, since this material contains 17 percent boron while borax contains about 11 percent boron. Both of these materials are available in commercial quantities and are relatively inexpensive.

Applications may be made either in the spring or fall of the year, spreading the material uniformly beneath the spread of the branches. A note of caution should be sounded against using more than the quantities mentioned above since boron is highly toxic when excessive amounts are used. While it is not definitely known, it is probable that one application will last for several years. Applications should not be renewed until internal cork re-occurs.

Potassium

While apple trees need a relatively large supply of available potash to make satisfactory growth, apparently most of our soils naturally contain sufficient amounts of potassium to maintain satisfactory growth and fruitfulness. Experimental tests in the Potomac Basin district have failed to demonstrate any benefit from applying potash directly to the trees.

With young apple trees growing in pure sand at Beltsville, it was found that growth increased with increasing amounts of potash supplied in the nutrient solution. Leaf analysis of these trees indicated that the potassium content of the leaves was closely associated with the amount of potassium supplied in the nutrient solution. It was further found that trees in this experiment made satisfactory growth when their leaves contained 1 percent or more of potassium.

Since the experiment described above indicated the potassium content of the leaves to be of considerable value in determining the available supply of potash to the tree, we thought it desirable to obtain leaf samples from a number of orchards throughout the Potomac Basin district in order to determine how much variation occurred in potash content of leaves.

Forty-seven blocks of trees were sampled, including Jonathan, Rome Beauty, and York Imperial varieties. Briefly, the potassium content of the foliage varied from 0.5 to 2.0 percent. Only 8 out of the 47 blocks sampled were under the 1 percent level. It is very possible that these 8 orchards would respond to potash fertilization while there would be little likelihood of obtaining response in orchards running 1.5 percent

or higher in potash content of foliage. It is quite probable that many of the fertilizer tests conducted in the past which resulted in negative response from potash were conducted in orchards already well supplied naturally.

In view of the reatively small percentage of orchards (based on our survey result) that were found to be suspiciously low in potash, it would not seem advisable to make potash applications unless leaf analysis indicated a low potash level.

It should be pointed out that the discussion in this paper relative to potash fertilization has reference to the direct needs of the apple tree. Potash as part of a complete fertilizer applied to cover crops growing in the orchard may be of benefit to the tree indirectly through its effect on cover crop growth.

SOME RECENT DEMONSTRATIONS IN ORCHARD FERTILIZATION IN WASHINGTON COUNTY. THE ROLE OF COVER CROPS IN THE MAINTENANCE OF SOIL FERTILITY IN ORCHARDS

M. D. Moore, County Agricultural Agent,
Hagerstown, Maryland

Undoubtedly the chief satisfaction in producing orchard fruits comes from growing and marketing fruit of the very highest food value; fruit that is rich in minerals and vitamins and the other things that make for the health of the consumer. We are only scratching the surface along these lines. Since the consumer is unwilling to pay a premium for such quality products, perhaps the grower's most important problem, aside from marketing, is the amount of fruit he can produce per acre. Barring such factors as frost, over which the grower has little control, the chief requisite for high production is the proper maintenance of available plant food in the soil.

We would like to think that the way to maintain soil fertility is to put the plant foods we desire into the soil by the use of commercial fertilizers. Unfortunately the problem is not so simple as this. Studies by Dr. Jack White of the Pennsylvania Station show that on the Jordan Soil Test Plots at State College, even on those plots where fertilizers have been used for over 70 years in amounts far in excess of the amounts used by the best type of farming, the fertility averages 33⅓% lower than that of the sod buffer strips between the plots where nothing has been added in over 70 years except the mowed-down bluegrass sod. The explanation for this is that under permanent sod where all plant material is allowed to decay and return to the soil, conditions are almost ideal for the activity of soil micro-organisms. The decayed plant material, or as the soil chemist terms it, the soil organic matter or soil humus, is the storeroom of the end-products of these soil organisms. These products are the mineral plant-nutrients. Furthermore, this soil humus acts as a regulator of the supply of these minerals to the growing

crop, which to the orchardists is the fruit tree. The mineral matter—the so-called ash material—in cover crops is included in the soil humus and is gradually liberated in a form again available to plants as the humus decomposes. Humus is not a mechanical accumulation of static or inert material. It represents a certain stage of an endless turn-over or exchange of certain elements between living matter and the mineral kingdom. The gradual mineralization of humus continually liberates a certain amount of simple mineral compounds in forms available for consumption by growing plants.

The soil is not a dead, inert material. Waksman of the New Jersey Station reports actual counts of from 9,500,000 to 10,100,000 of bacteria, fungi and protozoa per c. c. (between ¼ and ⅕ teaspoonful) in ordinary soil. Other investigators report as high as 60,000,000 per c. c. (cubic centimeter). The presence of these micro-organisms under proper temperature and moisture conditions is necessary for the decay of soil organic matter. Centuries before there was any science that acquainted people with the intricacies of plant nutrition, decaying organic matter, as in manure and in other forms, was recognized as an effective agent in the nourishment of plants. Now the orchardist, as a rule, does not have an abundant supply of barnyard manure, so to keep up the organic matter in his orchard soils he must resort to the growing of cover crops. It is not easy to grow cover crops in a mature orchard where moisture and sunlight competition between the cover crops and the fruit trees is keen.

The maintenance of soil productivity is not brought about simply by getting into the soil as much organic matter as possible, like a miser hoarding his money. Organic matter functions only as it is decayed and destroyed. A soil is more productive as more organic matter is destroyed and its simpler constituents made usable during the growing season.

Then, we run into a difficulty with cover crops as a source of organic matter that is quite important. Remember that soil bacteria, fungi and protozoa are the agents of decomposition of plant residues. They literally eat up the plant material, and in so doing use the carbon in the plants mainly as fuel and the nitrogen as building material for their bodies and for the production of intricate organic compounds that result from their activity. In this life-activity they make available the mineral content of the soil. And in these processes the higher plants cannot successfully compete with these micro-organisms. Where the higher plants come in for their share is when these organisms die. It is then that the compounds stored in their bodies become available. This competition may be quite harmful at a critical time for higher plants, especially when non-leguminous cover crops, or very strawy manure, is in the process of decay. Non-legumes are very low in nitrogen, so in order to get the needed supply of nitrogen the micro-organisms concerned in the destruction of these non-legumes and straw temporarily use up the nitrates in the soil. The best way to avoid this situation is

to grow mixtures of grass or grain and leguminous cover crops, such as vetch and rye, alfalfa, or sweet clover and bluegrass, or red clover and timothy or orchard grass. In these there is plenty of nitrogen for the micro-organisms in the soil. Or, the orchardist may find it profitable to supply nitrogen in the form of quick-acting nitrogenous fertilizers. And remember that in all cases, this plant food is available for the trees as soon as the bacteria, fungi and protozoa complete their process of destroying the organic matter and die off for want of food material. In short, we come back to the statement above that organic matter in the soil serves as a storehouse for the available minerals and other plant food constituents required by the fruit trees.

Here let me put in a word of caution. These plant food materials released by the soil micro-organisms for the higher plants—fruit trees in this case— are in the most available condition possible. This means they are readily soluble in water. So look out for soil erosion, especially surface or sheet erosion. Don't allow this readily-available plant material to wash away down the Potomac River.

In addition, organic matter or decaying vegetable matter holds from 8 to 9 times as much water as ordinary soil. It holds the water just as a sponge holds water. It isn't necessary to emphasize to orchardists the benefits of this water supply. His trees may need it when the inevitable dry spell comes.

The demonstrations I tell you about had to do with the use of fertilizers to grow more cover crops and to change the composition of the cover crops from weeds and bluegrass to a mixture of weeds, bluegrass, sweet clover and White Dutch clover. This work was done in the Green Lane apple orchard near Hancock owned by Mr. Stanley Fulton. In a block of 30-year-old York apples in permanent sod on the east slope of Tonoloway Ridge one-half the orchard was top-dressed late in the fall of 1937 with 300 lbs. per acre of 4-16-4 fertilizer. This fertilizer was applied primarily to the sod; that is, well beyond the limb spread of the trees. The other half of the orchard had no 4-16-4. Early in the spring of 1938 a nitrate application up to 8 pounds per tree was made over the whole orchard. This same treatment was repeated in the spring of 1939. In the fall of 1939, the 4-16-4 application was stepped up to 400 lbs per acre to be repeated in alternate years. This next spring Mr. Fulton plans to reduce the nitrate application in the attempt to bring out better color in the apples.

In the absence of definite figures or photographs it is difficult to bring out intelligibly the effect this fertilizer treatment has had on this sod. Where the complete fertilizer has been used there is a heavy growth of cover crop. This cover crop consists of bluegrass, sweet clover, red clover and alsike clover. White Dutch clover and lespedeza are rapidly coming in. No reseeding has been done in this cover crop. On that part of the orchard where no mixed fertilizer is being used, the cover crop is very scant and consists of bluegrass and weeds.

There has been a very noticeable increase in the number and size of fruits on the fertilizer block. However, no accurate yield records were obtained.

The soil in this orchard is Hagerstown clay and silt loam with a reaction of pH 6.2 to 6.5 (very slightly acid).

In an adjoining Berks shale block which was quite acid, burned lime was applied last fall at the rate of one ton per acre. This was seeded to rye to be mowed in the spring and seeded to sweet clover. The 4-16-4 fertilizer will be used on this block also. The first application of fertilizer was made when the rye was seeded. Quick-acting nitrate is, of course, used on these trees each spring.

Discussion led by G. William Gardenhour, Fruit Grower.

In the fall of 1938 we used cyanamid on our peach trees. In the spring we decided we were getting plenty of peaches, so we gave them balanced fertilizer—4-8-7. The fruit took on unusual size.

Question—Did you notice any difference in the color of the fruit?

Answer—The color was exceptionally good.

Question—How much cyanamid did you use?

Answer—For large peach trees, up to about five pounds.

Question—At what stage of the growth did you apply it?

Answer—In the spring.

Question—Do you think it is as effective in the spring as it would be in the fall?

Answer—We also applied it around February 22 and found in comparing the fruit that the cyanamid had ruined the flavor.

Question—Did the cyanamid trees mature as well as the nitrate trees?

Answer—There is about a day or two difference.

Question—What would be the effect of cyanamid if put on at this time of the year (January)—in respect to maturation?

Answer—It would be all right if not too much is used.

Another grower stated that nitrate of potash had evidently controlled bacterial spots on peach.

APPOINTMENT OF COMMITEEES

President Gardenhour appointed the following Committees:

Auditing—Walter V. Spessard, Chairman; John C. Martin, John E. Lippincott.

Resolutions—B. Carlisle Barnes, Chairman; J. Andrew Cohill, Russell C. Shaw.

Nominating—E. D. McCain, Chairman; S. B. Waddell, E. C. McFadden, Dwight Walker.

PLANT HORMONE SPRAYS IN THE CONTROL OF THE PRE-HARVEST DROP OF APPLES

(Summary)

F. E. GARDNER, Bureau of Plant Industry,
U. S. Horticultural Station, Beltsville, Maryland.

Many of the so-called plant hormones, more properly referred to as plant growth substances, are capable of preventing abscission (dropping) of various plant organs, including leaves, flowers and fruits. In recent experiments this fact has been put to practical use in delaying the pre-harvest drop of apples by spraying with dilute water solutions of these chemicals.

Effectiveness of various chemicals—Of a number of synthetic growth substances tried, two, namely napthalene-acetic acid and napthalene-acetamide, were oustanding in effectiveness. The methyl and ethyl esters of napthalene-acetic acid were less effective, followed by indole-butyric, indole-acetic and indole-propionic acids, the last named being only slightly effective.

Effective concentrations—Naphthalene-acetic acid and also naphthalene-acetamide in concentrations of .0005 to .001 per cent, equivalent to 1.9 to 3.8 grams per 100 gallons of spray, resulted in excellent control of dropping. With concentrations lower than .0005 per cent the effectiveness on most varieties was greatly reduced. On the other hand, concentrations higher than .001 per cent usually have not resulted in sufficiently better control to warrant their use.

Method of application—These materials were simply dissolved in a small amount of ethyl or methyl alcohol and added directly to water in the spray tank. The use of a little alcohol was only to facilitate solution which would otherwise take place rather slowly in water. The common practice of adding a spreading or sticking agent to sprays is desirable also in this case. The choice of spreader or sticker is apparently immaterial.*

In spraying, it is important that thorough coverage be given, with particular emphasis on hitting the fruit. As in any spray program, the control can be no more effective than the coverage given.

Time of application—The effective period of the spray applications is only 2 to 3 weeks with most varieties, after which period the effect is rather quickly dissipated. Therefore, in order to make use of the most effective period of the sprays they should be delayed as long as possible, preferably until dropping is well begun. The materials become effective within a day or two after application.

Addition of other spray ingredients—A small amount of light, summer oil, as little as ¼ of 1 per cent, will increase the effectiveness of the

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*EDITOR'S NOTE—"Santomerse", "Gardinol", or some type of casein spreader is satisfactory.

spray considerably. In cases where it will not complicate insecticide or fungicide spray residue removal, the addition of oil is probably desirable. An emulsifying agent must, of course, be used when oil is added.*

The addition of growth substances to the regular spray program is, in most cases, not feasible, since even the last cover spray would not be used as near harvest time as the anti-drop sprays should be applied. The growth substances should, accordingly, be applied as separate sprays even though the indications are that the presence of other spray materials do not lessen their effectiveness.

Effect of repeated applications—With most varieties, one application at the right time is sufficient. However, if desired, a second application can be applied as the effect of the first begins to run out. Double applications with only 3 to 5 days intervening may result in some varieties of tightening the fruit to the extent that some difficulty may be encountered in picking, resulting in considerable spur breakage and in pulling of stems out of the fruit.

McIntosh, a special case—Of more than 20 varieties sprayed during the past season, McIntosh was in a class by itself with respect to duration of the response. Whereas in other varieties the effect of the spray persists for several weeks, it remains effective on McIntosh for only 8 to 10 days. Therefore, it becomes more important with this variety that the application of the spray be delayed as long as possible in order to utilize its most effective period. If applied too early the effect of the spray will have largely run out before serious dropping sets in. For continued delay of dropping, a second application can be applied 7 or 8 days after the first, and is probably necessary under Maryland conditions for effective control of McIntosh drop.

Effect on early drop of flowers and young fruits—It is well known that many of the apple blossoms and young fruits drop during the first few weeks after bloom. While this is a kind of self-thinning response and therefore desirable, yet in some instances, as in the case of light bloom or poor set, it would be advantageous to prevent or reduce this drop. Experiments thus far with the growth substances have not been successful in affecting this early drop.

Effect of the sprays on tree and fruit—No deleterious effect of the sprays on the tree, fruit, or foliage has been observed. It is true that the growth substances have an effect on the leaves, as in the case of the fruit, of increasing their adherence to the stem, but this effect is apparently very temporary so that leaf drop at the end of the season takes place at the normal time. In the case of the fruit the only effect appears to be that of delaying drop, thereby allowing for better color development. With some varieties, such as Rome Beauty and Delicious, the grower, in the desire to take full advantage of this color development, may easily make the mistake of allowing sprayed fruit to hang too long and become too mature for best keeping quality.

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*EDITOR'S NOTE—If a miscible spray oil is used, no emulsifier is necessary.

Toxicity of the spray—Experiments involving injection of rabbits and mice with napthalene-acetic acid, and some of the indole acids, indicate that these growth substances are relatively non-toxic to animals. Because of the very small amount of the materials used in spraying and still smaller amount which actually hits and is retained by the fruit, it would be difficult to envision any problem of toxic residue from these sprays.

Cost and source of materials—Naphthalene-acetic acid and naphthalene-acetamide are definite chemical compounds which can be prepared only by technical laboratory synthesis. They can be purchased from several reliable chemical companies, although the present quotations make their use for spraying rather expensive. It is anticipated that a potential market for these chemicals, such as that offered in spraying fruit trees, will result in much lower prices before another season so that the eventual cost will be well within practical considerations. The interest of various chemical companies in the results secured with the growth substance sprays suggests that commercial preparations of these compounds, ready to add to the spray tank, will soon be available to the fruit grower. Because of the very small amount of active ingredients needed and the impossibility of the grower weighing such small amounts without special balances, the commercial preparations will probably consist of weighed amounts of the growth substances mixed with a filler. Such preparations should, in general, be most convenient and practical from the grower's standpoint.

Application to other fruits—It is probable that growth substances can be used advantageously also with fruits other than apple, and possibly in a number of troubles involving the abscission of plant parts. However, no definite information is available as yet as to the effectiveness of these sprays with other fruits.

Improvement of the method likely—It is not believed that the results secured to date represent the last word in control of dropping. In all probability, more effective compounds will be found and perhaps better methods of application or of increasing the effectiveness of the ingredients. The results thus far, however, indicate that the materials and the methods as described hold considerable promise as a practical solution to the problem of the pre-harvest drop.

Discussion led by Lloyd Balderston, Fruit Grower.

Question—Does it increase the root growth on trees?

Answer—We do not know as yet.

Question—What effect does it have on other trees?

Answer—Have not tried it on other than apples.

Question—Can you put it on the base of the tree instead of the tree itself?

Answer—It is much more effective to apply it by sprays.

Question—Does it affect the soil?

Answer—We have as yet to notice any difference in the soil.

Question—Are these materials toxic to animals?

Answer—They do not seem to have any particular effect on animals. It has been injected into animals and unless given in exceptionally large doses it seems to have no results.

Question—What about cost?

Answer—As to the price of the material, I hate to say. At the present time it is $2.50 a gram. The price is based on the cost of production. It is not manufactured in large quantities. The price will be lowered some time in the near future.

Question—Why does it cause the apple to stay on so long?

Answer—We haven't found out as yet. This is only one season's work.

Question—Did you try that early in the season when the apple is small?

Answer—Yes, but we found that it had no effect. It did not prevent the dropping of young fruit.

SOME RESULTS IN THINNING OF PEACHES BEFORE JUNE DROP

F. P. CULLINAN, Senior Pomologist, Division of Fruit and Vegetable Crops and Diseases, U. S. Horticultural Station, Beltsville Maryland.

The term June drop generally refers to the first heavy drop of young developing fruits that occurs about three to four weeks after the calyces, (or shucks as they are commonly called), are shed. This abscission or shedding of fruits does not always occur in June, as may be inferred from the term. In Western Maryland, the time of this first drop may be in June, while in Southern Maryland, or Eastern Shore, it may be in May, and for regions farther south it might occur in April or earlier, depending upon the time of bloom in any given season. It is the usual practice to wait until after this first drop has taken place before fruits are removed by thinning. Before discussing the effects of time of removal and other factors on size of fruit, it is well to keep in mind the normal seasonal growth rate of the fruit.

Growth Rate of Fruit

If we measure the rate of growth of the peach fruit from the time it is large enough to measure after the shuck is shed and throughout the season, it will be found that the growth rate is not regular, as it is with the apple, but is in three definite stages. From the time of blossoming for a period of approximately 60 days, for Elberta, the young, developing fruit grows very rapidly in length and in suture diameter. The growth

rate may be slow in the early part of the season, if the weather is cool. After this first stage there is a period of 30-35 days when the peach begins to slow down in length and diameter of growth. This is usually spoken of as the pit-hardening stage, because if we cut into the peach we find that the inner flesh which later becomes the pit has begun to harden. During this period, while growth is slow, there is some increase in size. Finally, a third stage is reached over a period of 35-40 days in which the peach increases in size in all dimensions, and markedly in cheek diameter. This is the stage that is commonly spoken of as the final swell. From the growers' standpoint this seems to be the most important period, since all of the cultural operations may have a bearing on the degree of final swell. This is the period in which a critical moisture shortage may result in a large money loss to the grower, if the peaches do not reach proper commercial size.

As the peach increases in size and volume during the various growth phases, the ultimate size will in large part be determined by the number of fruits carried on the tree. Under conditions favoring abundant blossom and a heavy set, volume increases during the first growth stage may not be so great as where the set is lighter. It is a matter of common observation that with a light bloom following a winter freeze the fruits may appear to be very large early in the season. A heavy set of blossoms and fruits on a peach tree causes a considerable drain on the nutrients; hence, if too many fruits are allowed to develop, there may not be sufficient nutrients stored in the tree or taken in from the soil to take care of the growth of all the fruits and at the same time provide for adequate shoot growth and the production of leaves. Consequently, near the end of the first growth period, we frequently notice a heavy shedding of fruits in what is commonly spoken of as the June drop. On fairly vigorous trees, too many fruits may remain on the tree after the June drop. It is apparent under these conditions that even with a fairly liberal supply of nitrogen and good cultural conditions of the soil, including ample moisture, peaches will not make desirable commercial size. Under conditions favoring a heavy load of fruit the leaf area is usually inadequate to manufacture food material necessary for the best enlargement of all the fruits.

Leaf Area and Size of Fruit

The relation of leaf area to size and quality of fruit is one of the important factors, therefore, to be considered. We know from our experiments in which the number of fruits on a branch is adjusted to the number of leaves produced on that branch that those fruits on branches with a larger leaf area will be of better size and better color at the end of the season. In these experiments we have found that it takes about 30 to 40 leaves to produce a fruit of good size and quality. On a heavily loaded Elberta peach tree the leaf ratio may be only 10 leaves to the fruit. Not only is the size of the fruit smaller on those limbs with a small leaf area, but the quality, which includes flavor

and texture, is also not so good as that of the peaches on branches with a larger leaf area.

This brings us to the question of the time of thinning. Is it better to do the thinning earlier in the season and remove the large number of fruits that normally would develop, and thus allow the energies of the tree to be diverted into production of shoots and leaves, or should the grower delay the time of thinning until he can be sure of the number that will eventually set? We have been carrying on some experiments with a number of varieties during the past several years to study the effects of early thinning in increasing the size of fruit, leaf, and shoot development and fruit-bud formation. These studies indicate that with the early-ripening varieties which have a tendency to set a heavy load of fruit, reduction in the number of fruits before the June drop has greatly increased the size of the fruit at the end of the first swell, and the fruits were larger at harvest time. These early-ripening varieties have a much shorter period of development than Elberta and later-ripening varieties. The varieties in particular which have been benefited by early thinning are Mayflower, Early Wheeler, Early Rose, Greensboro, Cumberland, Golden Jubilee, Carman, and Eclipse. With these varieties the benefit has not been confined to the size of the fruit, but the effect on young shoot growth and leaf size resulting from this early thinning has been marked.

The question immediately arises as to the cost of doing the thinning before a large drop has occurred naturally. It is questionable with many varieties whether the benefit derived in a single season from this increased fruit size will compensate for the cost of thinning. If the thinning is done early in the first growth stage there will be no heavy June drop. With many of the early-ripening varieties the final size of the fruits may not be greatly increased if thinning is delayed much after pit hardening has started. This is especially true if dry weather should prevail during the early part of the growing season and at the time the fruits are harvested. The grower will have to determine whether the greater value of the larger sized fruits will justify the expense of early thinning. In some cases, small, early-ripening varieties of poor size are almost unsaleable.

With later-ripening varieties, such as Elberta, it is usually the practice to wait until after the June drop and then to remove many of the small-sized and imperfect fruits. As will be noted from the slow increase in the second growth phase, thinning may be done any time during that period without affecting growth rate during the pit-hardening stage. Experiments with the Elberta variety during recent years show that if the set is not too heavy, and there is a good natural "June drop," thinning done as quickly after the "drop" as possible will result in fruits of good size and color. Our results have also shown that if thinning is delayed until well into the second growth stage, or pit-hardening stage, it may be done any time during this period and still result in a beneficial effect on final size of fruits as compared with those from

unthinned trees. It is well known that there is an appreciable effect on size, even if the thinning is done in the period of final swell. When Elberta produces a large crop of fruit, however, it would seem desirable to do the thinning just as early after the first "drop" as possible. If quickly done near the end of the first growth phase, the results will be as satisfactory as thinning earlier and the cost will be much less.

It should be recognized that in the last analysis the number of peaches to remove from a tree will depend upon the size of the tree and its bearing capacity. If a tree has the bearing capacity of only one to two bushels, only the number of peaches that will develop into a 2¼ to 2½ size should be left to make up this amount of fruit. When the tree sets uniformly heavy, it is possible to thin to a given distance of 6 to 8 or 8 to 10 inches. In most cases, however, this cannot be done satisfactorily, so that the leaf area, tree vigor, and bearing capacity should be used as a guide. It might be that following a spring freeze all of the live blossoms are found at the base of the terminal shoots. In this case, it may be necessary to leave all of the fruits, even though only an inch or two apart, or even touching, if the leaf area is sufficient to take care of this set.

It is apparent there are many factors that affect the final size of fruit. An adequate spray program is necessary in order to keep the foliage healthy and functioning. Even if thinning is well done and there is a shortage of moisture during the final swell, the fruits may not develop proper size. Here the importance of the soil management practice to use on any soil type must be considered in relation to the normal seasonal rainfall occurring in a good peach-growing section.

It is assumed in discussing the effects of fruit thinning the fruit grower is convinced that the cost of the removal of the fruit is a justified expense. Where the labor costs are high, the cost of thinning may be an important factor. In this connection, pruning to reduce the number of peaches on the tree may be one of the ways of reducing the thinning cost. Blossom thinning may be practiced if a large number of shoots are pruned off at blossom time. In sections where spring frosts are a factor, delaying the pruning until time of blossoming, when crop prospects are more certain, may be an economical procedure. As already pointed out, however, the grower should endeavor to complete the pruning work as soon after blossoming as possible and before too much early growth has started on the tree.

A MORE EFFECTIVE METHOD OF ORCHARD MOUSE CONTROL

H. J. SPENCER, Research Investigator, Bureau of Biological Survey,
U. S. Department of the Interior.
Washington, D. C.

The season for depredations on orchards by tree-girdling mice is at hand. The annual comeback of large populations of the injurious pine and meadow mice is underway. Orchardists need to prepare now for

combating the ever-increasing menace in order to prevent costly damage to apple trees during the coming months.

Loss to the apple industry through tree-girdling mice is difficult to estimate. A difference of opinion exists in regard to the value of trees killed by mice. Some orchardists value a 15-year-old tree, capable of producing a minimum crop of three bushels, at 15 dollars based on $1 for each year of its age. Others consider the replacement cost of the tree. Still other orchardists estimate the value of a tree killed by mice at the amount which might have been expected as profits from the crops during the remaining life span of the tree. Besides the loss sustained through trees killed by the mice, there is probably a yet greater loss, which cannot be estimated, due to the reduced quality and quantity of the annual crop from trees weakened by partial, non-fatal girdling.

A conservative estimate of the annual loss to a 100-acre orchard in which mouse depredations amount to a kill of ½ tree an acre is $5,000, or $50 an acre. Orchardists sustain this loss, even though it does not appear on their financial ledgers, as would a loss through theft or fire. In any event, such damage warrants concerted, consistent, and conscientious efforts to control the mice.

The problem is of such magnitude that it justifies placing the control of pine and meadow mice among the chief necessities in the care of orchards. Of all the representatives of the animal kingdom down through the ages, rats and mice have been the object of the most numerous and by far the broadest control measure, yet through their ability to adapt themselves to human occupation and resist repression, they still remain the most widespread rodent inflicting damage and carrying disease. Control cannot be successful, however, unless based upon a full knowledge of the factors involved.

The Bureau of Biological Survey, since 1934, has been carrying on intensive research on methods of controlling injurious orchard rodents east of the Mississippi River, especially in parts of the eastern apple belt, which extends from Maine to North Carolina. Improved control measures have been developed. In 1937, Federal, State, and private agencies initiated a cooperative control program in the New England States based on research findings, and, as a result, many thousands of dollars have been saved each year to the apple industry.

Similar cooperative control programs are being formulated and put into effect for Virginia and adjoining States. The concerted support of all fruit growers, their organizations, and related agencies in the States concerned is solicited to bring about an early and effective campaign.

An effective program embodies a thorough knowledge of the life habits, food preferences, environment, and species peculiarities of the two tree-girdling mice, namely the pine and meadow mice. It is likewise important to be familiar with the other species of mice which inhabit orchards but which do no damage. The mice in this catagory are the

common house mouse, the deer mouse, commonly called the wood mouse or white-bellied mouse, and the jumping mouse which is more or less rare.

It is our pleasure to be in a position to present to you an improved method for the control of injurious orchard mice. A recently developed rodenticide employing Zinc Phosphide as the lethal agent has proven superior to past and present existing poisons or rodenticides. The study of the food preferences of mice has brought out the fact that apple, the product of your orchards, is the best food-bait, with sweet potato and carrots being second and third in choice. Steam crushed whole oats is desired over wheat and other small grains, and grains rank below apples, sweet potatoes and carrots as bait materials.

The proper use or the application of any poison bait is more than half the battle in the control of injurious orchard mice. Demonstrations in the proper manner of exposing poisoned treated food bait have been found necessary for obtaining maximum efficiency. Three methods have been worked out which, when properly applied, will give effective results. The three methods can be mentioned under the headings of (1) open hole and runway placement, (2) utilization of squares of asphalt roofing paper or any similar flat moisture resistant material, and (3) placement of bait in several places under the mulch about the tree, where mulch is used.

Insofar as the program schedule limits the time for the complete presentation of the subject matter I solicit your patience to view a 2 reel motion picture in sound which I am sure you will agree with me, after you have seen it, that it covers the subject as thoroughly as could be presented here.

The Bureau of Biological Survey is operating an exhibit in the exhibit hall through the graciousness of your Society, about which we can hold discussions for forwarding the dissemination of improved orchard mouse control methods, should any of you desire to have this information and service.

(An excellent sound movie followed Mr. Spencer's discussion.)

SHOULD WE USE DINITRO OR TAR OIL FOR DORMANT SPRAY?

W. S. HOUGH, Entomologist, Virginia Experiment Station,
Winchester, Virginia.

The title of this discussion is a question to which I will respond by summarizing our experience of 1939.

In northern Virginia the outbreak of rosy apple aphids in 1939 varied widely from orchard to orchard and in different parts of the same orchard. In the extreme northern part of the state, little or no damage resulted even on unsprayed trees.

The results presented here refer to experimental work carried out in orchards at Winchester, Luray and Timberville. Only at the last named location did the rosy apple aphids do any damage on the unsprayed check trees which is our only clue to the possible value of the tests in

estimating results on the control of this insect. Even in the Timberville orchard, the infestation varied greatly and, of course, the results obtained with the various materials varied accordingly. That is, in areas of light infestation all materials gave excellent control while in heavily infested areas some did not give satisfactory control. In Table 1 the tests are grouped according to the severity of the infestation as indicated by the average number of infested clusters found on the unsprayed check trees occurring in that section of the orchard. Some of the materials were used for the first time and we hesitate to draw any conclusions from a single season's results; therefore, the data are presented without comment.

Table 1.—*Results of some orchard experiments for control of the rosy apple aphids, Timberville, Va., 1939*

Materials used and amount per 100 gal.	Infested clusters per tree (Avg.)
Nitro-Kleenup 3 gal.	0
Oil 3% and tar oil 2½%	5
Dowspray Dormant 2 gal.	3
Oil 2% and Dry Mix-DN 1¾ lbs.	116
Oil 3% and Dry Mix-DN 1¾ lbs.	28
Checks, not sprayed	1218
Nitrocide (Dormocide) (2% toxic) 3 gal.	122
Dow Dormant Powder 1¼ lbs. (8 oz. DNOCHP)*	11
Checks, not sprayed	982
Oil 2% & Dow Dormant Powder 1 lb. (6 oz. DNOCHP)*	12
Oil 2% & Dow Dormant Powder 1¼ lbs. (8 oz. DNOCHP)*	1
Nitro-Kleenup 3½ gal.	0
Elgetol 1 gal.	0
Checks, not sprayed	210
Nitrocide (Dormocide) (1% toxic) 3 gal.	2.7
Nitrocide (Dormocide) (3% toxic) 3 gal.	13.2
Oil 2% & Dow Dormant Powder 1¼ lbs. (8 oz. DNOCHP)*	0.4
Checks, not sprayed	174.0

As was to be expected from the nature of the outbreak of rosy apple aphids in many orchards, all kinds of control (excellent to no control at all) were attributed to the materials used. But the kind of materials used was not necessarily the only factor influencing the results. The results also varied according to the degree or quantity of the infestation; to weather conditions prevailing at the time of spraying; and to the condition of the spray mixture in the tank; that is, whether the materials were properly dispersed in the water or were separating in the spray tank.

In the orchards where the rosy aphids did not appear we could use

*DNOCHP signifies di-nitro-oxy-cyclo-hexyl-phenol.

only the count of the "green aphids" found on the bud tips in the delayed dormant stage as an index to the possible egg-killing powers of the dormant sprays (Table 2). I hesitate to say that such an examination furnishes a reliable index of efficiency for control of rosy apple aphids. At most it may possibly shed a little light on what one might expect to follow, if the rosy aphids should occur in the orchard.

Table 2.—*Green aphids found on green bud tips of trees sprayed with various dormant sprays in March 1939.*

Materials used and amount per 100 gallons	No. of live aphids per 300 buds	
	Stayman Orchard	Rome Orchard
Nitro-Kleenup 3 gal.	7	3
Oil 3% & tar oil 2½%	7	11
Dowspray Dormant 2 gal.	3	8
Oil 2% & Dry Mix-DN 1¾ lbs.	0	.....
Oil 3% & Dry Mix-DN 1¾ lbs.	6	0
Nitrocide (Dormocide) (1% toxic) 3 gal.	62	3
Nitrocide (Dormocide) (2% toxic) 3 gal.	29	21
Nitrocide (Dormocide) (3% toxic) 3 gal.	94	30
Elgetol 1 gal.	0	.....
Nitro-Kleenup 3½ gal.	0	0
Dow Dormant Powder 1¼ lbs. (8 oz. DNOCHP)*	12	.....
Oil 2% & Dow Dormant Powder 1¼ lbs. (8 oz. DNOCHP)*	2	.....
Checks, not sprayed	822	299

Some of the results obtained against scurfy scale in a heavily infested orchard are shown in Table 3. These sprays were applied under excellent conditions and most materials gave a high degree of control.

Table 3.—*Results of some dormant sprays against scurfy scale, Winchester, Virginia, 1939*

Materials used and amount per 100 gallons	Percent Control
Elgetol 1 gal.	95.0
No. 6 Soluble oil 3 gal.	100.0
Oil 4% (Goulac-Bentonite emulsifier)	92.0
Oil 4% (83% emulsion 4¾ gal.)	92.0
Nitrocide (Dormocide) (1% toxic) 3 gal.	99.0
No. 6 Soluble oil 3 gal. & Dow Dormant Powder 1¼ lbs. (8 oz. DNOCHP)*	100.0
Oil 4% & Dow Dormant Powder 1¼ lbs. (8 oz. DNOCHP)*	98.0
Checks, not sprayed	96% hatched

*DNOCHP signifies di-nitro-oxy-cyclo-hexyl-phenol.

Mention should be made of evident injury on some of the trees in this orchard which received 4 percent oil and 8 ounces of dinitro-o-cyclo-hexylphenol. On the injured twigs and branches all, or nearly all, of the lateral buds failed to open. The result was that few or no leaves appeared on the 1938 wood. Not all injury of this type, however, can be attributed to the dormant sprays. Similar injury was observed on young, vigorous apple trees which did not receive any dormant or delayed dormant sprays. It will be recalled that the most severe weather of last winter occurred November 26, 27 and 28 when the minimum temperature ranged only 7 to 9 degrees above zero. At that time, the apple trees had not become completely dormant because the weather prior to that time had been unusually mild. Many of the lateral buds were killed or weakened and died during the winter. Others were weakened and succumbed to the shock of the dormant spray, especially where concentrations of oil exceeding 3 percent were used with 8 ounces of dinitro-o-cyclo-hexylphenol per 100 gallons. Indications also were obtained that dinitro-o-cresol and dinitro-phenol at the same dilution in oil sprays exceeding 3% strength were equally toxic to apple buds. While similar conditions may not occur in this section for many years, it is apparent that the amount of oil that can be safely used in dinitro sprays is definitely limited. Two percent oil with 8 ounces of dinitro-o-cyclo-hexylphenol and 3% oil with 6 ounces of the dinitro ingredient appear to be within the range of safe combinations and at the same time have given control of rosy aphids when applied in March.

Discussion led by John P. Caspar, Fruit Grower.

I have an interesting incident concerning the use of Di-Nitro. Di-Nitro spray was used over an entire orchard of York Imperials. The trees looked bad, but finally, and very late, the buds came to life, bloomed and bore fruit. The buds were not harmed and the Di-Nitro-Oil spray may be an asset in that it may delay the growth till after frost.

Question—How much oil was added?

Answer—Two gallons to the prepared Di-Nitro-Oil spray.

Question—Was that total 2% or 4% oil?

Answer—About 4%.

Mr. Fagan: I am sure that you will remember a good many years ago the New Zealand workers found that spray oil delayed the trees from breaking the buds, early. I am a little afraid of anything that interferes that much with the work of Mother Nature but still we did hold apple buds back by use of oil and noticed no ill effects at all. We may skip a freeze, but we may also do real injury to the fruit buds, by trying to delay their normal bloom period by artificial means, especially with oils or chemicals.

RESUME OF NEW DEVELOPMENTS IN JAPANESE BEETLE RETARDATION WORK IN MARYLAND FOR 1939

GEORGE S. LANGFORD, Specialist in Insect Control,
University of Maryland, College Park, Maryland.

The Department of Entomology at the University of Maryland has continued its cooperative Japanese beetle retardation program during 1939. The work is now well organized, and valuable advances have been made in all fields of endeavor, namely: trapping, spraying, soil treatment, agricultural adjustment and biological control. The retardation program against the Japanese beetle is being conducted on a thorough-going cooperative basis between the Federal, State, County and municipal governments. The efficiency of the work has been maintained by the cooperation of the County Commissioners in the twenty-two counties in which Japanese beetles have been found. Special mention should be made of the cooperation given by all of the agricultural agencies in the State, and especially this Society. Practically every member has given aid and cooperation. Messrs. William G. Gardenhour, Fulton Allen, Roy G. Weagley, J. Keiffer Funk, J. Andrew Cohill and G. Hale Harrison have been especially active in organizing the program.

Status of the Japanese Beetle as a Fruit Pest in Maryland

From the standpoint of the fruit grower, the beetle has not yet established itself in the more concentrated fruit growing sections of the State. Therefore, there has been little opportunity to observe the beetle as a fruit pest of commercial orchards in Maryland. It has become established in a few commercial orchards in Cecil County, as well as many home orchards throughout Harford, Cecil and Kent Counties. Observations in these orchards indicate that it is going to be a real pest as far as the Maryland fruit grower is concerned. On late apples and peaches, indications are that it is going to be necessary to apply at least one extra spray to protect foliage. The cost of this spray may be from $4.00 to $6.00 an acre. On early peaches and apples indications are that spraying will not adequately protect the crop. On early apples, such as Transparents, fruit losses will probably average from 40 to 50 per cent of the crop. Considerable loss on peaches has been observed by the nipping of the peaches which were later seriously damaged by brown rot that gained entrance into the fruit through Japanese beetle injuries. Serious damage is now being encountered throughout the heavily infested areas on fields, vegetable, and ornamental plants. The past year over fifty farm and garden crops were observed to be damaged.

Investigations on the Value of Traps

Approximately 100,000 traps were operated in the State during the year. Over 104 tons of beetles were caught. Traps were operated in all lightly infested areas for retardation purposes. In the heavily infested areas, traps were made available to farmers on a lease-loan basis.

For each trap a farmer would lease for a period of two years, the co-operating agencies made a loan of another trap. The question of the efficiency of traps was thoroughly investigated this past year. Results obtained on individual farms showed that if one trap to the acre is used and an effort is made to operate the traps efficiently, farmers may expect to catch from forty to eighty per cent of the beetles on their property.

It was impossible to check accurately the value of traps in protecting crops, but both field observations and opinions of farmers who used traps, indicated that traps can be profitably used to lessen crop losses. Experiments also showed that traps are not efficient to the extent of fully protecting crops from Japanese beetles, but there is every indication that they have a place in a control program, not only as a supplementary control measure, but under certain conditions as a direct measure.

Development of Inexpensive Japanese Beetle Traps

It is believed that if traps are to be used successfully for Japanese beetle control, the following must be accepted:

1. Trapping for Japanese beetles should be, for best results, a co-operative endeavor.

2. Traps, to be effective, should be used in sufficient numbers to catch large quantities of beetles.

Considering the general interest of the farmers in traps, it is believed the one fundamental requisite for obtaining the needed number of traps is an efficient and cheap trap. A number of cheap traps have been assembled by the Department of Entomology at the University of Maryland. In order to study the effectiveness of these cheap traps under farm conditions as compared with the standard government control trap, field demonstrations were undertaken. Thirteen different designs of traps were studied. A general resume of the data collected in these demonstrations of the more efficient traps is as follows:

Comparative studies on the efficiency of the Maryland 1939 trap, the government control trap, Patent No. 1968954, and the Federal scouting trap, showed the government control trap was the least efficient of the three. The Maryland 1939 trap was approximately 10 per cent more efficient than the Federal scouting trap.

Traps made of wood, or of paraffin-treated and painted cardboard were efficient for catching beetles, but the paper traps were too fragile for general use.

Unpainted, galvanized iron traps were compared with aluminum-painted and green and white painted traps. The latter was sufficiently more efficient to pay for the cost of painting. Painting the inside of the funnels white was only slightly more effective than painting the funnels green.

Traps having a 60 degree funnel pitch were more effective than 45 or 80 degree funnels, and a ¾ inch bottom aperture was much more effective than a one-inch aperture.

A supporting rod of galvanized wire Number "O," 66 inches over all was developed that was purchased for 7½¢, a saving of 11½¢ over the original type. Demonstrations disclosed that traps suspended 3½ feet from the ground were more efficient than those suspended at 4½ and 5½ feet.

The one-half inch tubular cotton wick was more efficient than the ¼" tubular wick, or the felt pads, under the average conditions in large-scale trapping where indifferent attention to length of wick exposed may be expected.

The demonstration showed that a new unassembled trap of high efficiency, with a one gallon container and rod, complete, except for bait, that can be manufactured and delivered for 27½¢ is satisfactory for recommendation.

Spraying Demonstrations

Many spray materials are effective in repelling Japanese beetles. In order to test the effectiveness of several spray materials that are in use, or have been suggested for use, eight spray-combinations were applied to each of three plots. The spray materials containing arsenic, as basic copper arsenate and arsenate of lead, in combination with stickers, such as wheat flour, or D-X, were quite good for protecting the foliage of apple trees from beetle damage. However, spray injury was noticed on the trees in which the arsenicals were applied. Non-arsenical sprays of tetra-methyl-thiuram-disulphide; derris and rosin residue emulsion; and aluminum sulphate and lime, were found to be efficient in repelling beetles for short periods of time. In order to obtain adequate protection from the above non-arsenical sprays, indications are that weekly applications are needed. Preliminary tests with two proprietary rotenone-bearing sprays, namely, Japellent and Japex, indicate that these sprays are effective for protecting foliage for short periods of time. Flower buds, or blossoms, are not protected. The following is a list of the more effective sprays with the concentrations with which they were used:

1. Basic copper arsenate—3 lbs.
   Wheat flour—2 lbs.
   Water—100 gals.
2. Lead arsenate—3 lbs.
   D-X—3 pints.
   Water—100 gals.
3. Lead arsenate—3 lbs.
   Wheat flour—2 lbs.
   Water—100 gals.
4. Hydrated lime—20 lbs.
   Aluminum sulphate—3 lbs.
   Water—100 gals.
5. Tetra-methyl thiuram
   Disulphide—5 lbs.
   Water—100 gals.
6. Derris (4%)—4 lbs.
   Rosin residue emulsion—4 pints
   Water—100 gals.
7. McCormick's Japanese
   beetle spray—1 gal.
   Water—100 gals.
8. Check (unsprayed).

A cooperative spray demonstration was undertaken in the City of Elkton for the purpose of demonstrating the value of sprays for protecting the foliage of shade trees and ornamental shrubbery. Two applications of arsenate of lead—6 pounds, wheat flour—4 pounds, and water—100 gallons, were made. The work was started on June 24th and completed on July 22nd. These two sprays resulted in the preservation of practically all of the foliage on sprayed shade trees, fruit trees and shrubs in the city. In adjacent sections, unsprayed susceptible plants were severely damaged. At Princess Anne, King's Creek, Westover and Pocomoke, spray demonstrations using hydrated lime—20 pounds, aluminum sulphate—3 pounds, and water—100 gallons, applied to all trees, and shrubbery, were made to determine the value of spraying to drive beetles away from and protect produce loading stations from excessive Japanese beetle populations. The results from these demonstrations showed that spraying is a definite aid in eliminating the bulk of beetle infestation around loading points. Surveys showed that beetle populations were reduced from 75 to 95 per cent at the loading points by these spray applications.

Dusting Demonstrations

Numerous dusting demonstrations throughout the heavily infested areas were undertaken to determine the value of lime dust in preventing beetle damage to corn and asparagus. In the case of corn, it was found that if the silk was kept covered with lime dust, damage was reduced 59 per cent. Lime dust was decidedly beneficial in protecting asparagus foliage. Because of the ease with which lime dust is washed off by rains, repeated applications are necessary to fully protect plants.

Biological Control

Cooperating with the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, a special effort has been made to introduce and establish parasites and diseases of the Japanese beetle.

The work of colonizing the two parasitic wasps, *Tiphia vernalis* and *Tiphia popilliavora* has been continued. To date, there have been liberated in the State, 463 colonies of these wasps.

Work on the establishment of the parasitic nematode *Neoaplectana glaseri* was initiated. Three colonies were established in Cecil County this year.

The milky white disease of Japanese beetle grubs shows considerable promise as a natural means of control. Cooperative work for the establishment of this disease in the State has been initiated. Over 250,000 grubs were collected for use in culturing the disease organism. This disease affects Japanese Beetle only.

Agricultural Adjustment

There are crops that many farmers cannot grow economically under beetle conditions. It may be economical to replace them by some other crops that are not severely attacked. With other crops it may be possible to eliminate considerable beetle damage by changing the planting

date. Observations were made in an effort to note any practical changes that might be made in general farm practices to eliminate or relieve losses from beetles.

The Japanese beetle has damaged corn 40 to 50 per cent in areas in Maryland that are heavily infested with the beetle. The beetles destroy the corn silk, thereby preventing pollination. Indications are that if corn can be planted late enough to silk after the heavy flight of the beetle passes, there will be very little damage. The Department of Entomology has cooperated with the Agronomy Department for the past two years to determine proper dates for planting under conditions of heavy beetle infestation.

In 1938, ten varieties and two planting dates, May 13 and May 31, were tested. The corn varieties were: Lancaster Sure Crop, Golden Queen, Reid's Yellow Dent, Johnson County White, Eureka, National Hybrid 125, Hybrid (Indiana) 497-S, Indiana Hybrid 845, Funk Hybrid 235, Funk Hybrid 244.

Of the corn planted on May 13 no variety escaped excessive damage. The bushel loss per acre varied from 9.3 bushels (National Hybrid 125) to 23.9 bushels (Reid's Yellow Dent), while the corn planted on May 31st varied from 1.2 bushels to 14.7 bushels loss per acre. The greatest damage suffered on any variety that silked after August 10 was 3.3 bushels per acre.

Results in 1939 however, were not so outstanding. The probable cause for this was that the beetles in 1939 emerged approximately two weeks later than they did in 1938 and continued active about two weeks longer than normal. Therefore, the late corn in 1939 silked before the beetles left, and as a result both the early and late planted corn suffered serious Japanese beetle damage.

The planting dates in 1939 were May 18 and June 7. The varieties tested were: Funk Hybrid G-527W, National Hybrid 132, U. S. Hybrid 102, U. S. Hybrid 84, Reid's Yellow Dent, Golden Queen, Funk Hybrid G-235, U. S. Hybrid 13, Funk Hybrid G-125, Funk Hybrid G-135, Lancaster Sure Crop, Iowa Hybrid 939, U. S. Hybrid 44, U. S. Hybrid 65 and U. S. Hybrid 52. The summary of the results is as follows:

1. Beetle damage was serious in both plantings. The bushel loss per acre from beetle damage varied from 3 to 15 bushels per acre.

2. The amount of beetle damage showed some association with the time of silking, but none of the above varieties silked late enough to escape beetle damage.

3. Moldy eared corn showed some association with beetle damage. Early planted corn showed the greatest number of moldy ears. In general, the late planted corn outyielded the early planted corn.

General observations indicate that in certain dairying sections of the State, it may be possible to eliminate considerable loss obtained in corn from the Japanese beetle by the use of more barley and less corn. By substituting barley for some of the corn that is now grown, the following general advantages may be had.

1. A considerable amount of the loss now incurred by the Japanese beetle will be eliminated.

2. For less labor, barley will furnish food that has approximately the equivalent food value of corn.

3. Barley can be followed to good advantage with sweet clover or lespedeza, which will be ready for grazing when grass is "short" in late summer.

Soil Treatment

If grass lands, lawns, golf greens, or cemeteries are treated with arsenate of lead at the rate of ten pounds to 1,000 square feet of space, they will be protected from Japanese beetle grub damage for a period of five years. Because of the high cost of treatment and the fact that certain crops do not grow well in arsenate of lead treated soil, this treatment is not recommended for pasture or farm land. Soil treatment is practical for lawns, golf greens, and cemeteries. Therefore, educational work is being done to encourage individuals living in cities and towns to treat their lawns. If all of the city and town people would cooperate and treat their lawns with arsenate of lead, their Japanese beetle problems would be reduced to a minimum.

Survey of Public Opinion

In an endeavor to determine public reaction to the Maryland program, a questionnaire was submitted to approximately 15,000 individuals cooperating in the program. According to these questionnaires 91 per cent of the people thought the program was effective and desired the work to be continued. Only 2 per cent were opposed to the program.

THE CODLING MOTH SITUATION

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In order to determine the average percent of clean fruit in each of the commercial orchards and the insect and disease conditions, Dr. Graham has been making an annual survey. This year, 48 commercial orchards were visited at harvest time and samples of one to two bushels of the picked fruit were examined. All of the fruit in 121 samples were examined individually and scored for codling moth entry and stings, curculio, scale and scab, and the averages per orchards and for each of the four regions calculated.

In the Hancock section, the situation is especially good with 90.60 per cent of the fruit free from insect and disease injury. In the Hagerstown section, the average is 74.73 per cent; in Carroll, Frederick and Montgomery counties the average is 81.80 per cent; and on the Eastern Shore the average is 52.02 per cent. Although several orchards were able to obtain better than 95 per cent clean fruit, there were a few that had extreme codling moth damage and one or two with large scab injuries that brought the average down.

Hancock Section—Survey, 1939

Orchard Number	VARIETY	Per cent Worms	Per cent Stings	Per cent Curculio	Per cent Scale	Total Insect Injury	Per cent Scab	Per cent Fruit free from Insect and Disease
1	Jonathan	0	.66	0	0	.66	0	99.33
	Ben Davis	3.00	16.00	2.00	0	21.00	0	79.00
	Black Twig	1.00	3.00	1.50	0	5.50	0	94.50
2	Jonathan	2.00	3.00	0	0	5.00	0	95.00
	Rome	8.00	11.00	0	0	19.00	0	81.00
	Ben Davis	1.50	12.00	1.50	0	15.00	0	85.00
3	Jonathan	1.00	.50	0	0	1.50	0	98.50
	Black Twig	0	4.00	0	0	4.00	0	96.00
4	Rome	5.00	5.00	1.00	0	11.00	0	89.00
5	Stayman	2.50	0	2.50	0	5.00	0	95.00
6	Jonathan	1.00	1.50	.50	0	3.00	0	97.00
	Grimes	.50	1.00	0	0	1.50	0	98.50
	Jonathan	7.00	8.00	0	0	15.00	0	85.00
	Delicious	5.00	17.00	0	0	22.00	0	78.00
	Lowry	1.00	1.00	2.00	0	4.00	18.00	78.00
	W. Banana	6.00	8.00	0	0	14.00	0	86.00
	S. House	3.00	4.00	0	0	7.00	0	93.00
	York	0	.50	0	0	.50	0	99.50
	Rome	2.00	6.00	0	0	8.00	0	92.00
7	Delicious	8.00	7.00	0	0	15.00	0	85.00
	Gano	1.00	3.00	0	0	4.00	0	96.00
8	Jonathan	1.00	1.00	0	.40	2.40	0	97.60
	Delicious	4.00	9.00	0	1.00	14.00	0	86.00
	Grimes	1.00	2.00	0	0	3.00	0	97.00
	York	5.00	6.00	1.00	0	12.00	1.00	87.00
9	Delicious	2.00	5.00	1.00	0	8.00	1.00	91.00
	Jonathan	0	2.00	0	0	2.00	1.00	97.00
	York	1.00	0	0	0	1.00	0	99.00
10	York	0	1.00	0	0	1.00	0	99.00
	Ben Davis	0	.50	.50	0	1.00	0	99.00
	Va. Winesap	0	.50	1.00	0	1.50	.50	98.00
11	York	2.00	20.00	7.00	0	29.00	0	71.00
12	York	5.00	10.00	3.00	0	18.00	0	82.00
	Stayman	11.00	6.00	4.00	0	21.00	1.00	78.00
	Average	2.66	5.18	.81	.049	8.69	.66	90.60

12 orchards; 34 samples.

92.16 per cent free from codling moth injury.

Hagerstown Section—Survey, 1939

Orchard Number	VARIETY	Per cent Worms	Per cent Stings	Per cent Curculio	Per cent Scale	Total Insect Injury	Per cent Scab	Per cent Fruit free from Insect and Disease
1	Jonathan	16.00	22.00	0	.50	38.50	.50	61.00
	Delicious	14.00	26.00	2.00	0	42.00	0	58.00
	York	1.00	30.00	3.00	0	34.00	0	66.00
2	Delicious	35.00	15.00	6.00	12.00	68.00	6.00	26.00
3	Baldwin	5.00	40.00	0	0	45.00	0	55.00
	Grimes	6.00	55.00	0	0	61.00	1.00	38.00
	Delicious	13.00	43.00	2.00	0	58.00	0	42.00
	King David	10.00	72.00	0	0	82.00	0	18.00
4	Delicious	0	4.00	1.00	0	5.00	1.50	93.50
	Va. Winesap	.50	1.00	1.50	0	2.00	.50	97.50
	York	0	0	0	0	0	0	100.00
	Ben Davis	1.00	2.00	.50	0	3.50	0	96.50
	Regal Red	1.00	0	0	0	1.00	0	99.00
5	Spitzenberg	3.00	6.00	.50	0	9.50	0	90.50
	Va. Winesap	10.00	12.00	0	0	22.00	0	78.00
6	York	.50	.50	0	0	1.00	0	99.00
7	York	2.00	10.00	1.00	0	13.00	0	87.00
8	Jonathan	1.50	2.00	.50	0	4.00	.50	95.50
	York	.50	18.00	5.00	0	23.50	.50	76.00
9	Delicious	14.00	18.00	4.00	0	36.00	5.00	59.00
	Stayman	12.00	31.00	1.00	1.00	45.00	1.00	54.00
	York	6.00	26.00	1.00	0	33.00	0	67.00
10	Delicious	4.00	2.00	0	0	6.00	1.00	93.00
	Jonathan	2.00	2.00	0	0	4.00	0	96.00
11	Delicious	2.00	5.00	5.00	0	12.00	13.00	75.00
	Black Twig	3.00	5.00	2.00	1.00	11.00	1.00	88.00
12	Delicious	0	8.00	0	0	8.00	3.00	89.00
13	Delicious	53.00	8.00	1.00	0	62.00	28.00	10.00
14	Delicious	10.00	12.00	7.00	1.00	30.00	14.00	56.00
15	Black Twig	3.50	8.00	3.00	0	14.50	1.00	84.50
	Jonathan	2.00	1.00	1.00	0	4.00	1.50	94.50
	York	.50	5.00	1.00	0	6.50	0	93.50
	Ben Davis	7.00	3.00	0	0	10.00	0	90.00
	Stayman	2.00	2.00	0	0	4.00	0	96.00
16	Black Twig	.50	9.00	7.00	0	16.50	.50	83.00
	York	0	11.00	.50	0	11.50	.50	88.00
	Average	6.71	14.29	1.54	.43	22.94	2.23	74.73

16 orchards; 36 samples.

79.00 per cent free of codling moth injury.

Carroll, Frederick and Montgomery Counties—Survey, 1939

Orchard Number	VARIETY	Per cent Worms	Per cent Stings	Per cent Curculio	Per cent Scale	Total Insect Injury	Per cent Scab	Per cent Fruit free from Insect and Disease
1	Jonathan	2.50	4.00	17.00	13.00	36.50	8.00	55.50
	Grimes	1.50	.50	3.00	.50	5.50	2.00	92.50
2	Jonathan	20.00	17.00	9.00	.50	46.50	0	53.50
3	Jonathan	5.00	6.00	5.00	0	16.00	0	84.00
	York	6.00	10.00	6.00	0	22.00	0	78.00
	Delicious	10.00	18.00	1.00	0	29.00	0	71.00
	Starks	5.00	2.00	8.00	0	15.00	0	85.00
4	Jonathan	17.00	12.00	1.00	0	30.00	1.00	69.00
	Stayman	13.00	18.00	1.50	0	32.50	5.00	62.50
5	Jonathan	2.00	6.00	0	0	8.00	0	92.00
	Delicious	2.00	6.00	0	0	8.00	1.00	91.00
	Stayman	0	5.00	.50	0	5.50	0	94.50
	Va. Winesap	0	3.00	3.00	0	6.00	0	94.00
	York	0	8.00	1.00	23.00	32.00	0	68.00
6	Delicious	2.00	8.00	2.50	0	12.50	2.00	85.50
	Jonathan	.50	.50	.50	0	1.50	0	98.50
	Grimes	0	4.00	1.00	0	5.00	0	95.00
	Stayman	10.00	7.00	0	0	17.00	2.00	81.00
	Rome	0	2.00	1.00	0	3.00	6.00	91.00
	York	.50	4.50	1.00	1.00	7.00	1.00	92.00
7	Grimes	0	1.00	0	0	1.00	0	99.00
	Stayman	.50	3.00	3.50	0	7.00	0	93.00
	Black Twig	5.00	15.00	0	0	20.00	0	80.00
8	Delicious	.50	.50	1.50	0	2.50	40.00	57.50
9	York	3.00	5.00	.25	.75	9.00	.50	90.50
	Stayman	.50	4.00	2.00	0	6.50	3.00	90.50
	York	0	10.00	2.00	1.50	13.50	0	86.50
	Va. Winesap	15.00	12.00	1.00	0	28.00	12.00	60.00
10	Delicious	3.50	2.00	1.50	0	7.00	8.00	85.00
	Stayman	2.00	6.00	12.00	.50	20.50	1.00	78.50
	Average	4.23	6.66	2.83	1.35	15.12	3.08	81.80

10 orchards; 30 samples.

89.11 per cent free from codling moth injury.

Eastern Shore Section—Survey, 1939

Orchard Number	VARIETY	Per cent Worms	Per cent Stings	Per cent Curculio	Per cent Scale	Total Insect Injury	Per cent Scab	Per cent Fruit free from Insect and Disease
1	Jonathan	4.00	10.00	0	0	14.00	0	86.00
	York	7.00	50.00	2.00	0	59.00	4.00	37.00
2	Va. Winesap	6.00	62.00	0	0	68.00	7.00	25.00
	Stayman	40.00	46.00	0	0	86.00	3.00	11.00
3	Va. Winsap	2.50	18.00	.50	0	21.00	1.00	78.00
	Rome	42.00	27.00	2.00	0	71.00	5.00	24.00
	York	27.00	26.00	2.00	0	55.00	2.00	43.00
4	Grimes	10.00	60.00	9.00	0	79.00	0	21.00
5	Golden Delicious	8.00	19.00	1.00	0	18.00	0	82.00
6	York	6.00	11.00	1.00	0	17.00	0	83.00
	Stayman	4.00	18.00	1.00	0	23.00	0	77.00
	Stayman	.50	3.00	0	0	3.50	1.00	95.50
7	Grimes	0	1.50	0	0	1.50	0	98.50
	Black Twig	0	6.00	0	1.00	7.00	4.00	89.00
	Va. Winesap	3.00	18.00	11.00	0	32.00	14.00	54.00
	Stayman	4.00	29.00	1.00	0	34.00	32.00	34.00
8	York	4.00	31.00	1.00	.50	36.50	6.50	57.00
9	Va. Winesap	17.00	47.00	2.00	.50	66.50	6.00	27.50
	Stayman	13.00	51.00	.50	.50	65.00	3.00	32.00
	Black Twig	23.00	40.00	2.50	.50	66.00	14.00	20.00
10	Stayman	22.00	52.00	0	3.00	77.00	5.00	18.00
	Average	11.52	29.31	1.74	.29	42.85	5.12	52.02

10 orchards; 21 samples.

59.17 per cent free from codling moth injury.

The codling moth-free average in the Hancock section, 12 orchards, 34 samples, was 92.16 per cent; in the Hagerstown section, 16 orchards, 36 samples, 79.0 per cent; in the central area, 10 orchards, 30 samples, 89.11 per cent; and on the Eastern Shore, 10 orchards, 21 samples, 59.17 per cent.

Even with the best of spraying, it is very easy for the codling moth to build up to a point where the most efficient spraying is not sufficient to cope with the situation. Therefore, today I want to show you what may happen in case you do not use all of the approved sanitary measures. These figures that are given are based on the actual crops in the three orchards selected for these computations, but every effort has been made to make the figures just as conservative as possible.

As you will note, one orchard has been getting excellent results and the other two have been getting very poor results. The orchards were selected primarily because they represented three different-sized orchards.

I want you to follow me through these calculations to see how and why these particular calculations were made and to note the results that may be achieved by sanitation as against the results which are pretty likely to follow if spraying only is depended upon to control the codling moth.

ORCHARD NO. 4

Without Supplemental Control

Crop 1939. 5,000 bu. × 100 apples per bu. = 500,000.

Average per cent of worms in Black Twigs and Yorks = ¼%.

Total number of worms going into hibernation 1939 = 500,000 × ¼% = 1250 worms.

Assuming all survive and ½ are females, there would be 625 female moths, each laying an average of 50 eggs.

625 × 50 = 31,250 eggs or worms.

If the same spraying efficiency is maintained in the 2nd brood sprays, there would again be a survival of ¼% of the worms.

31,250 × ¼% = 78 worms surviving to form the 2nd brood.

78 ÷ 2 = 39 female moths.

39 × 50 = 1950 eggs or worms.

If the same spraying efficiency is maintained in the 2nd brood sprays, there would again be a survival of ¼% for the fall carry-over of 1940. 1950 × ¼% = 4.875 worms, a decrease of approximately 300%.

With Supplemental Control

If this orchardist uses supplemental control measures, it would appear that the pest could be eliminated, but this is not accurate. There would still be a few moths to carry on; but the great reduction is an indication of what may be accomplished by thorough spraying plus sanitary measures.

ORCHARD NO. 5

Without Supplemental Control

Crop 1939. 100,000 bu. × 100 apples = 10,000,000 apples.

Average worms in Jonathan, Delicious, Grimes and Yorks = 2.75%.

Total worms going into hibernation in 1939—10,000,000 × 2.75% = 275,000 worms.

Assuming all survive and ½ are females, there would be 137,500 female moths each laying an average of 50 eggs.

137,500 × 50 = 6,875,000 eggs or worms in the spring of 1940.

If the same spraying efficiency is maintained against the 1st brood, there would be a survival of 2.75% worms.

6,875,000 × 2.75% = 189,062 worms surviving to form the 2nd brood.

189,062 ÷ 2 = 94,531 female moths.

94,531 × 50 = 4,726,550 eggs or worms.

If the same spraying efficiency is maintained in the 2nd brood sprays, there would again be a survival of 2.75% for the fall carry-over of 1940. 4,726,550 × 2.75% = 129,980 worms going into hibernation in 1940, a reduction of 47%.

With Supplemental Control

Let us suppose that this orchardist uses every means of reducing the carry-over. In addition to spraying, he bands his trees and keeps picking boxes in tight storage until July. By so doing, he should reduce the 1st and 2nd brood survival of the spraying program by 40% in the orchard and the survival in the packing shed by 50%. Let us see how supplemental measures help.

6,875,000 worms in the spring of 1940 are reduced by spraying, but 2.75% survive.

6,875,000 × 2.75% = 189,062 worms, of which bands capture 40%, leaving 60%.

189,062 × 60% = 113,437.

113,437 worms survive, of which ½ are females or 56,718 female moths.

56,718 × 50 = 2,835,900 eggs or worms for the 2nd brood.

Again spraying reduces the number, leaving 2.75%.

2,835,900 × 2.75% = 77,987 worms.

80% of these worms stay in the orchard.

20% of these worms stay in the packing shed.

77,987 × 80% = 62,390.

77,987 × 20% = 15,597.

Of those staying in the orchard, 60% survive the bands.

62,390 × 60% = 37,434 worms left in the orchard.

15,597 × 50% = 7,798 worms left in shed, or a total population of 45,232 worms as against 129,980, a reduction of nearly two-thirds.

ORCHARD NO. 6

Without Supplemental Control

Crop 1939. 16,000 bu. × 100 apples = 1,600,000 apples.

Average worms in Baldwins, Grimes, Delicious and King David = 8.5%.

Total number of worms going into hibernation in 1939 = 1,600,000 × 8.5% = 136,000.

Assuming all survive and ½ are females, there would be 68,000 female moths, each laying an average of 50 eggs.

68,000 × 50 = 3,400,000 eggs or worms.

If the same spraying efficiency is maintained against the 1st brood, there would be a survival of 8.5%.
3,400,000 × 8.5% = 289,000 worms.

289,000 ÷ 2 = 144,500 female moths.
144,500 × 50 = 7,225,000 worms to go into hibernation in 1940 as against 136,000.

With Supplemental Control

Let us suppose that this orchardist uses every means of reducing the carry-over. In addition to spraying, he bands his trees, etc.

3,400,000 worms in the spring are reduced by spraying, but 8.5% survive.
3,400,000 × 8.5% = 289,000 worms.
Of the survivors from the spray, 60% escape the bands.
289,000 × 60% = 173,400, ½ of which are females.
173,400 ÷ 2 = 86,700 female moths to produce the 2nd generation.
86,700 × 50 = 4,335,000 eggs or worms. Again spraying reduces the number, leaving 8.5%.
4,335,000 × 8.5% = 368,475.
Of these 80% remain in the orchard and 20% in the packing shed.
368,475 × 80% = 294,780.
368,475 × 20% = 73,695.

Of those staying in the orchard, 60% survive the bands.
294,788 × 60% = 176,868 worms remaining in the orchard.
73,695 × 50% = 36,847 worms remaining in the shed; or a total of 213,715 worms going into hibernation in 1940.

136,000 in 1939 with no supplemental control.
7,225,000 in 1940 with no supplemental control.
213,715 in 1940 with supplemental control.

Carry these computations home with you and when you get the records for your orchard, I hope you will make a similar computation so that you will know what may happen in your orchard.

Discussion led by J. A. Cohill, Fruit Grower.

Dr. Cory has hesitated to mention names. I don't know why. I think it is just as well to mention them. I don't wash and I don't want to wash. It is very costly and consideration of cost is something that has been neglected during this convention. I have been following Dr. Cory's program and I notice that our per cent is not quite as bad as some and not as good as others.

There are so many different angles to this subject but I would like to dwell on this thing called cost. There must be something done about it. We try to sell our apples for a high enough price to cover the amount of money we put into them. Some of the men who merely pick their apples and take them to the cannery without bothering to pack

them, do get enough money back to cover the cost and that is all. The men who went to a lot of trouble fixing up their apples did not get their money. We still have to get after the worm before delivering even to the cannery, so we have to kill the moth. We have to control the worm even down to the cider apples. Then, we have the culls. Shall we have a law controlling these culls? There have been two proposals. One is to stop us from carrying them across State lines. The other way is by each State tackling it themselves. We have had laws before but no funds to police them, so they faded out. Now are we ready to execute a law? In 1935 we begged the Government to buy our apples. They bought them but told us to go home and do something about this condition. In 1937 the same action was repeated. Then, in 1939, we again sold them to the Government. Three times in succession we were told to do something, but as yet you haven't. Now, what are we going to do? Let's think over the cull question.

BUILDING AND OPERATING A COLD STORAGE PLANT AT THE ORCHARD

F. H. WISSLER, Fruit Grower
Mt. Jackson, Virginia

For a number of years I have not been satisfied with the cold storage situation. In the first place, rates have been excessively high, but even more important, I was pretty sure when I stored my apples that in January or February I was going to start finding scald, or break-down, or both. We have gone a long way in the last thirty years in the production of apples. We are all pretty good growers. We prune, cultivate, fertilize, spray, thin, harvest and pack much better than we used to, or we could not stay in the business, but we are still storing in exactly the same storages that we used thirty years ago. I am not satisfied with this.

I collected and studied all of the information on storages that I could get and my conclusion was that no one really knew very much about it. I got in my car and went around everywhere looking at storages, and asking fool questions. When I found storages that had little trouble with scald or else had a lot of trouble, I tried to find similarities or differences in construction or management. Our storage had to be cheaper or we might just as well use the present storages. We planned and built, and here is what evolved:

Our building is of frame construction 80 x 168 feet x 9 feet, 2 inches. It contains one story; two rooms. With one story we need no elevators, thereby reducing construction and operating costs. If we had built two floors the supporting structure would have had to be of cement and steel, and this would have cost more than the greater roof surface. The walls are eight inches thick, filled with regranulated cork, built of two by four studding set on 24 inch centers on the inside and outside walls, making them twelve inches apart. They are staggered so that we have

continuous cork. Starting at the outside the construction is: First, German siding; next, two layers of moisture-proof paper, the first coat lapped down on the outside to prevent moisture from entering the seam, the next layer lapped down on the inside to prevent cork from entering the seam when the wall is filled; next, eight inches of cork and then another layer of moisture proof paper and the final seal being ordinary roofers.

The roof and supports are as follows: There are three lines of posts twenty feet apart across the building and eleven posts fourteen feet apart the long way. Eleven wood trusses of lattice base and top of trusses made of three 2 x 8 inch boards and attic of 1 x 6 inch lumber. The trusses are five feet high and take out the side-sway, support the ceiling and help hold the roof. They are supported by the three lines of cross posts. The ceiling is laid on top of the joists and is covered with a layer of moisture-proof paper, then ten inches of regranulated cork spread over it. The roof is A type covered with galvanized iron.

The floor is six inches of bare stone rolled with a 5 ton roller, then 6 inches of cinders, rolled, then 4 inches regranulated cork, then 4 inches of rock chips rolled hard. Over this a floor of oak made of 2 x 8 timbers with a 1½ inch space between the boards, is laid on four by sixes giving a slat floor with an air space below. This is in sections so that it can be raised and cleaned out underneath.

There are two doors on each side and one on each end and one in the middle partition.

The dry ammonia, direct expansion system was designed by York and is automatic. The compressor is 6 x 6, driven by a 25 hp. motor. The well furnishing the water is located in the power house. We are using about 15 gallons per minute.

Two lines of wooden air conveyors run lengthwise through each room. At intervals there are adjustable openings on each side of these conveyors and a rotary fan is located at the head of these ducts in each room; back of these fans is an atomizer nozzle that feeds water into the suction of the fans. A small air compressor furnishes air for the atomizer. The amount of air issuing from the vents is set so that it will not be excessive and cause shrivelling. Humidistats start the fans and atomizers at a determined degree of humidity. The fans can be operated by a manual control, so that we can circulate the air, if we desire, when this is satisfactory and these fans would not otherwise start. We find that the need for extra moisture is very great in the fall when the storage is being loaded. We are maintaining a humidity of around 90.

The outside doors, being on all sides of this building, greatly facilitate keeping the storage free from gasses.

The storage is all above ground, avoiding the necessity of constantly fighting the earth temperature of about 56 degrees. Up to the present the operation of this plant is entirely satisfactory.

Discussion led by R. S. Dillon, Jr., Fruit Grower

What Mr. Wissler has said about need of research is very important. There is no applied rule to measure cold storage. I would like to disagree, however, on his construction. In building these storages we should make them fire proof. One of our buildings burned down when it was full of fruit. I think cork board is very satisfactory, although in time it will start to dry rot. Costs are important. We have to lower the cost. Perhaps the best way is to have our own plants instead of paying to have the fruit stored. Storage plants charge extremely high prices, although they have been reduced a little lately. I am going to call on Mr. R. C. Shaw.

Mr. Shaw: I come from Harford County where they don't do things in such a big way. The cost of my storage plant was $9,000. It holds 6,000 bushels of apples. We have no posts in our plant. The roof is of steel construction. The refrigeration is a Carrier Company outfit. The coils are kept clean of frost. We have the humidity pretty well taken care of. The cost of operation so far this year was $210. It was built as much to take care of peaches as apples. It is warmer in peach time than in apple time and that is what ran the cost up.

Question—How long can you keep peaches in storage?

Answer—About three weeks.

Question—What were your savings?

Answer—We used it three times during the season and it is extremely handy, but I can't tell you the saving.

Question—Do you store all your fruit at home?

Answer—No. We store some in Baltimore.

Mr. Dan Martin: I am very well pleased with our storage. Mr. Wissler says it costs him 33 cents a bushel to store his fruit. The cost of his plant without machinery was $10,000.

Our storage plant has not been built long enough to ascertain the cost, but the cost of any storage is a little higher this year than it was last year. I think that the answer to this cold storage problem is to build your own.

THE NATIONAL AGRICULTURAL PROGRAMS AFFECTING THE FRUIT GROWER

T. B. SYMONS, Director, Extension Service, University of Maryland, College Park, Maryland.

I am happy to have this opportunity to discuss the application of our new farm programs to fruit growers. First, let me congratulate the Society on the progress that it is making. This fine attendance and interest demonstrates your ability to meet the changing conditions that are confronting fruit growers, as well as all farmers. I particularly desire to congratulate the officers, especially the Secretary, and the leaders in Entomology and Pathology, as well as the Horticultural Department, in promoting the work, with your assistance, in the State.

While conditions have changed, I still believe that this territory of Western Maryland, West Virginia and Virginia offers the greatest opportunity for the development of horticulture in the East. The new programs have been launched with the principal objective of affording greater help and parity for agriculture, including horticulture. While I believe the programs have not considered the fruit grower as favorably as the cereal grower, yet changes are constantly being made so as to offer greater assistance to the horticulturist.

When I mention parity, it signifies that we are all anxious to see the farmer receive for his produce and labor, prices comparable to those paid in other industries. While farming conditions have improved, yet they are more than 25 per cent below the parity figure at the present time. This is illustrated by the fact that in 1914 a wheat binder could be purchased for $112, while today the grower must pay $250. As long as the policy of the Government is to extend tariff benefits to industry, I believe it is fair for agriculture to receive some subsidy, at least, to help them in their present situation.

Speaking by and large, the cash income to Maryland farmers in 1939 with the Government's subsidy of $2,000,000, amounted to about $65,000,000. The cash income to Maryland farmers in 1938, plus the Government subsidy of $1,452,000, amounted to $65,692,000. To show the tremendous disparity, we find in 1932 the value received by Maryland farmers on the same basis was $40,000,000, while in 1919 they received $100,000,000. So, you will observe that we have gone from a low of $40,000,000 in 1932 to about $65,000,000 at the present time.

Let me say in passing that you people are greatly interested and affected by the present world conditions for, as you know, this section exports a lot of fruit and this market has practically been closed. I feel, therefore, that this group of producers, at least, should be heartily in favor of reciprocal trade treaties which will enable us at the close of the war to continue our fruit export business.

I will present charts showing graphically the development of the various programs in the State. The first illustrates the total payments made to Maryland farmers in the Agricultural Adjustment Program. You will note that the total paid from 1934 to 1939 is $10,100,000. I am pleased to say that this program is being widened. The fruit growers will be paid $2.00 an acre for soil-building practices and an additional allowance is made for the planting of forest trees.

The second chart relates to the Farm Security Administration. First, you will note that the Debt Adjustment work in Maryland has reached about 600 farmers who were in distress. Their debts, amounting to around $4,000,000, have been reduced by $1,000,000 or 25 per cent. Loans and grants in aid have been extended to some 1,700 farm families, and the Farm Tenancy Program has been inaugurated in eight counties of the State. A total of $180,307 has been allocated this year by the State Committee to various counties for the purchase of farms by desirable tenants.

COMMODITIES PURCHASED AND PRICES PAID TO MARYLAND PRODUCERS BY THE FEDERAL SURPLUS COMMODITIES CORPORATION

	1933	1934	1935	1936	1937	1938	1939
Fresh Apples				37,856 bu. $26,500	54,425 bu. $ 29,200	36,036 bu. $ 23,800	160,347 bu. $111,200
Hogs	5,000 hogs $18,000	22,635 hogs $172,900					
Pork Products		90,819 lbs. $ 8,600					
White Potatoes		63,965 bu. $ 34,900	91,579 bu. $ 35,000		37,562 bu. $ 17,200	170,510 bu. $ 77,900	
Dry Skim Milk			921,004 lbs. $ 53,400	440,250 lbs. $37,100	720,650 lbs. $ 44,600	1,175,889 lbs. $ 53,900	
Evaporated Milk			44,000 cases $100,400		1,600 cases $ 3,700		
Cottonseed Oil					780,000 lbs. $ 60,200		
Shortening					694,200 lbs.		
Eggs					6,200 cases $44,000		
Sweet Potatoes					11,168 bu. $ 3,100	14,660 bu. $ 5,300	7,281 bu. $ 2,600
Fish						44,625 lbs. $ 4,000	
Canned Peas						96,852 cases $127,100	
White Flour						15,540 bbls. $ 57,300	1,500 bbls. $ 5,600
Total	$18,000	$216,400	$188,800	$63,600	$202,000	$349,300	$119,400

Total for years 1933-1939 ..... $1,157,500

We now come to the Soil Conservation Program. This undoubtedly is the most effective and desirable long-time program that has been inaugurated. You will note that while the first demonstration was conducted in Washington County it has now spread to other sections of the State, and to date we have five conservation districts established in Maryland. Splendid progress has marked the work in the first district, Kent County, during the year. I am happy that the farmers in Washington County recently petitioned our State Committee for a district in that area. We are not reclaiming soil as fast as it is running away. We have lost more than 10,000 acres in Maryland and at the same time 1,000,000 acres have been badly eroded.

Your distinguished President served as a striking example of what could be accomplished by terracing and strip crop farming in his orchard areas around Smithsburg.

We now come to a program that has been of substantial help to the fruit growers, namely, the Surplus Commodity Corporation. You will note on the chart the quantity of products that have been purchased in Maryland during the past four years. You will recall that a group of your growers, with a group of us from the University, appeared before the Washington officials and sought their aid last fall in purchasing apples that were blown off by the hurricane that struck this section in September. The Surplus Commodity Corporation has been of tremendous assistance to farmers where unusual surpluses of products have accrued and this agency has afforded a means of distributing these products for relief purposes in all parts of the United States. This brings up the question of the stamp plan that was inaugurated by the Department of Agriculture last year, which encourages greater use of surplus commodities by those securing aid through relief. I think we should have this plan in use in Baltimore and other nearby cities, as it would aid in using our additional surplus commodities.

There are other features of the programs that I could well cite, as well as various phases of Extension work in relation to the fruit grower's interest. I will close, however, by saying that I hope we will continue to emphasize quality of our fruit, that you will continue to support the fine program developed by our entomologists for the control of the Japanese beetle and that you will cooperate in the Apple Show in Baltimore, as well as in the community shows. We are indebted to the Fair Board for assistance in these community shows, which are inspirational and helpful to all sections of the State.

I appreciate this opportunity to discuss some of the broader problems affecting the interest of the fruit growers, as well as farmers of Maryland.

IS POLLINATION STILL A PROBLEM IN OUR APPLE ORCHARDS?

H. F. HERSHEY, Fruit Grower, Hamburg, Pennsylvania.

I would like to state the question as follows: Is pollination still a limiting factor to more than average annual production in our apple orchards? I would say decidedly, yes, pollination is a limiting factor if we have large blocks of Delicious, Stayman or other members of the Winesap group. If our blocks are planted so that these varieties, which are not self-pollinating, are close enough to pollinating varieties, I would answer the question, no, provided there are enough bees or other insects in the orchard to carry the viable pollen to the self-sterile varieties.

The block of trees in which we had a pollination problem was planted in 1913 and consisted of Delicious and Stayman. Other blocks were inter-planted with other varieties and have not been a problem. One of our blocks consists of two rows of Stayman and one row of Romes and this block has been one of our most productive. While the Romes bloom later, yet the bloom comes early enough to give good results on the Stayman.

Our problem block was originally Delicious inter-planted with Stayman, 18x18, which was entirely too close. About twelve years ago, the row of Stayman was taken out, leaving a solid row of Delicious, 18x36. On the south side of this block there were five rows of Stayman not inter-planted and on the west side a block of 700 Stayman planted solid. The Delicious remaining have some odd varieties scattered among them such as Snow, Pewaukee, Gano and a few other non-de-script varieties.

Until eighteen years of age, this block of Delicious would yield from 2,500 to 4,000 bushels of apples annually, scarcely an average of two bushels per tree. This, in spite of the fact that these trees were a mass of bloom every spring, and in looking down through the rows it looked as if veritable snowbanks were piled up. Certainly, they should have bloomed as they were not yielding enough fruit to hinder the formation of buds. In seeking information, we were told that Delicious was late coming into bearing in the east and that it was in reality an apple for the Northwest.

We began to take careful note of the block and finally began to realize that the Delicious trees adjoining the Snow, Pewaukee and Gano varieties always had a good crop whenever they bloomed. The influence of these pollinators extended to the third tree, and the fourth tree away rarely felt its influence. The trees along the edges of the block close to pollinating varieties also always had a crop. We also observed that the Stayman on the south and west sides of the Delicious block always bore good crops on the three rows next to the Delicious but beyond that, in most seasons, the pollinating influence was not noticeable. This showed that Delicious would pollinate Stayman but that Stayman would not work on Delicious, as Stayman pollen is not viable.

We decided that something had to be done. We purchased about 1,000 ten-quart buckets and started placing bouquets in the trees. We attached a rather heavy wire to each bucket handle and hooked a bucket on a limb in the upper third of the tree, choosing a limb heavy enough so that we could tie the bunch of bloom with binder twine to the limb and thus keep the bloom in place in the bucket. The first year we used rather heavy branches about an inch in diameter and six or eight feet long. These were hard to handle and place in the buckets properly and on extremely hot days these large branches sucked the water out faster than we could replenish it. Since the first year we have used small branches, three to four feet in length and they have worked satisfactorily and we usually only have to re-fill the buckets once. We used only Transparent bloom when we had it, but have also used Grimes, Gano, Jonathan, Wealthy and Rome successfully. Our yield per tree was consistently six to eight bushels average when we used only bouquets.

When we started using bouquets, we also started to top-work a limb in most of the Delicious trees, placing the scions whenever possible in the upper third of the tree. For this work we used mostly Golden Delicious but also placed some Transparent, Grimes and McIntosh scions. We used yellow varieties mostly so that they would not be mixed in the packing operation. The Golden Delicious has proven the most satisfactory, as they have made more than double the growth of the other varieties used. They also bloomed quite freely in the third year after placing, and their pollen seems to be especially compatible with Delicious. We thin the Golden Delicious very hard just as soon as we can, after they have set, so that they will not overbear and cut down on the bloom for another year. For the past few years, since the grafts have bloomed well, our average yield has been from ten to twelve bushels per tree and we have thinned the Delicious the past four seasons.

One of the necessary adjuncts for good pollination is plenty of bees or other insects in the orchard to distribute the pollen, as it has been proven that apple blossom pollen cannot be carried by the wind. We use one colony of bees per acre and every spring we add two pounds of southern package bees to each hive about ten days before blossom time, so that each hive will be bubbling over with bees ready to work. The bee men say that bees will fly more in cool weather if the colony has a surplus of bees. A few hours work by lots of bees may mean the difference of a full crop or only a partial crop. We do not keep our bees for profit, but rather as an insurance policy for a good set of fruit. We have a good man to take care of our bees. He understands and likes them and for his services we give him two-thirds of the honey and we furnish all supplies including the package bees. We think the arrangement very satisfactory.

In 1927, we planted another block of Delicious, alternating four rows of Delicious with either four rows of Jonathan or McIntosh. From the time that these Delicious trees have bloomed, they have always set apples and generally have had to be thinned. We like to think of the

crops of Delicious we might have had in the years when apple prices were REAL, if our original block had been inter-planted with the proper pollinating varieties. In looking back over our 1925 sales, we noted Grimes and Summer Rambo sold to storekeepers at $1.65 per bushel.

I am not a dairyman, but I am told that the successful dairyman—one who can give his children a college education and at the same time buy the niceties of life which we all enjoy—must have cows with high annual production. Average or ordinary production is not enough. So it is with the apple grower. Good production in the "off" years should be the goal. Our experience has been that with such varieties as Delicious, Stayman and other members of the Winesap family that proper attention to pollination with plenty of bees to distribute the pollen pays big dividends. Profits are made when we have more than average crops in the "off years," when the countrywide production is below normal. In the final analysis, net profit is what we want.

Discussion led by B. Carlisle Barnes, Fruit Grower

Perhaps someone will give his experiences in relation to pollination.

Mr. McCain: We had a right large block of Stayman apple trees from which for years we got little or no fruit. We started grafting in the trees. Now we have no trouble at all.

Question—Just where did you put these grafts?

Answer—In the upper part of the tree; not up too far, but the top third, in order to help the growth.

Question—Do you feel that you get very good results with the Grimes grafts?

Answer—I don't believe we do. We don't get the growth.

Question—How close are the grafted trees?

Answer—Every third tree will bring good results.

Question—Do you plan to harvest the fruit in those grafted trees?

Answer—They are generally picked but we make no special effort.

Mr. George Abrams: As a State bee man I am interested in this pollination problem and would like to warn you that it is worse to have a bee hive without an experienced man in charge than it is to have none at all. If you do not wish to hire such a man it is best to rent the bees from a reliable source. As Secretary of the Maryland State Beekeepers' Association, I can put any grower in touch with a reliable beekeeper. Write Mr. George Abrams, College Park, Md.

STUDIES OF THE SOURCE AND CAUSE OF BRUISING APPLES DURING THE HARVESTING AND MARKETING OPERATIONS OF 1937 AND 1938 AT INWOOD, WEST VIRGINIA

HUGH PRETTYMAN, Manager, Inwood Packing House
Inwood, West Virginia.

In response to complaints from both shippers and receivers of apples from the Martinsburg area, a study was begun in the Fall of 1937 to determine the source and the cause of excessive damage by bruising to our commercial apple packs.

It was apparent from the beginning that the bruises complained of by the receivers were not chargeable to any one phase of the harvesting and marketing process, but rather an accumulation of injury starting in with the pickers and culminating in the final blow given by the grocery boy who picks up the apple from the bin and tosses it carelessly into a bag with the balance of the housewife's purchases.

However, in order to determine just how much damage was done by picking, hauling, grading, packing and shipping, careful counts were made of a large number of samples in the orchards and at the packing houses before and after each of the various operations.

In setting up standards for taking data, it was agreed that one or two slight bruises not exceeding ¼ inch in diameter would be counted as "none"; from 3 to 5 bruises under ¼ inch in diameter was counted slight, and all over ¼ inch were considered serious. Likewise more than five slight bruises and all stem punctures and skin breaks were classed as serious. In taking data, each apple in a box or basket was carefully taken up and examined and its condition then recorded on a tallying machine. In this manner we tabulated the following information on bruising done by apple pickers:

Table I.—*Summary by Varieties of Bruising by Pickers*

Degree of Bruises	York		Stay-man			Grimes			Gold. Del.			Jon.			Total		
	Count	%	Count	%		Count	%		Count	%		Count	%		Count	%	
None	584	71	513	50		1160	52		525	47		434	64		3216	54	
Slight	138	17	280	27	50	346	15	48	146	13	53	66	10	36	976	17	46
Serious	97	12	241	23		744	33		459	40		181	26		1722	29	
Total	819	100	1034	100		2250	100		1130	100		681	100		5914	100	
Percent Total Bruise		29		50			48			53			36			46	
Placing	Low			2nd			3rd			high			4th				

A study of the figures on damage done by pickers indicates that Golden Delicious showed the greatest amount of damage with total bruising amounting to 53 per cent; Staymans were a close second with

slightly over 50 percent, and Grimes a runner-up with 48 percent, while Jonathans came into fourth place with 36 percent and York lowest with only 29 percent.

The figures on HAULING reveal that Jonathan suffered most, with 17 percent damage, and York stood up best with only 10½ percent.

Taking the entire group of five varieties, Yorks, Staymans, Grimes, Golden Delicious and Jonathans, the average total bruises by *pickers* amounted to 46 percent, and by the *hauling* operations 12.8 and these two operations together brought the total damage up to 52.8 percent of all the fruit damaged by bruising by the time it was delivered to the platform of the packing house.

Bruises Caused by Machines:

In order to determine the amount of bruising done by each unit of a grader, it necessitates the slow procedure of running a given sample through each unit and checking the sample before it passes on to the next unit. Various attempts were made to do this by random sampling at different points on the grader, but the results varied so widely that they gave but little indication of what actually happens as the fruit is passed from one unit to another. In one instance, however, a bruise-free sample of Grimes was run over a grader with an under-flood brush-type washer, a "kicker wheel" sizer and continuous bin with distributing belts, and as the apples passed each of these units, the machine was stopped and a complete check made of the resultant bruises. The results of this work are shown in Table II.

Table II.—*Bruises Caused by Various Units of an Apple Grader*

Degree of Bruise	At Start		Thru Washer			Thru Sizer		In Bins		
	Count	%	Count	%		Count	%	Count	%	
None	215	100	91	42		63	29	46	21	
Slight	.....	.....	119	56	58	123	57	105	49	79
Serious	.....	.....	5	2		29	14	64	30	
Total	215	100	215	100		215	100	215	100	

On this test it was found that 58 per cent of the apples were bruised to some extent by the washing unit; the sizer added another 13 percent to what the washer had done, and by the time the fruit was in the bins and ready to be run into the package, the total amount of bruising came to 79 per cent of an originally 100 percent bruise-free sample. This check was made in one of our better packing houses and, while much variation will be found in the amount of damage done by different machines, yet the fact remains that all of them injure the fruit to some

extent and every possible precaution should be taken to eliminate mechanical injury and to educate our packing crews to handle the fruit more carefully at all times.

Bruises in the Container:

In order that we might know something of the extent to which bruising is found in the package before it leaves the packing house, counts were made on a number of varieties and it was found that the average total bruises in baskets ready for shipment, but before loaded on cars was 57 percent. Grimes was highest with 72 percent and York low with 28 percent total bruises; while in serious bruises only, Yorks were still low with 14 percent, and Grimes Golden Delicious ran up to 57 per cent.

Bruises in Transit:

Some follow-up was made during the 1937-38 marketing season on the condition of apples after they had gone through storage, and were offered for sale on the Morgantown, W. Va., market. In this study we examined several different kinds of packages, such as export tubs, wire-bound boxes, 1⅕ bushel boxes, (jumble packed) and standard-pack Northwestern boxes.

Table III

Degree of Bruise	1 1/5 Box Winc., Va. Blk. Twigs		Ex. Tubs Nearby Red Del.		Ex. Tubs Winc., Va. Gold. Del.		Wire Bnd. Box Frederick, Md. Stayman		N. W. Box Wash. Red. Del.		All Sect. and Pkg. All Var.	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
None	56	8	185	28	46	5	13	2	59	13	299	10
Slight	171	23	324	48	217	26	174	29	147	32	886	31
Serious	509	69	166	24	573	69	423	69	254	55	1671	59
Total	736	100	675	100	836	100	610	100	460	100	2856	100
Total Bruises	.....	92	.....	72	.....	95	.....	98	.....	87	.....	89

It is interesting to note that the apples shipped into West Virginia from the State of Washington showed less total bruise and less bruise of a serious nature than all of the samples checked from the Shenandoah producing-area, and that the amount of serious damage was identical (69%) in the wire-bound, 1⅕ bushel box, and export tubs.

During the 1938-39 season, we continued our study of bruising, but confined it almost exclusively to determining the effects of various net weights on the problem of bruises in the packages. There is always a difference of opinion between the man who packs the fruit and the one who buys it, as to how much fruit there should be in the basket.

Accordingly, we set out to learn just how much damage was done to the apples when the packages were heaped up as some buyers insist upon having them. To get at the problem, we ran several series of test baskets with weights ranging from 43½ lbs. to 48 lbs. net, and after these packages were lidded and set aside in the shipping room, they were carefully inspected for both total bruises and for bruises that apparently were due to the pressure of one apple upon another or to contact with the lid or package proper. The results we secured from this study would indicate that varieties like Grimes, Stayman, and Golden Delicious should be packed with not more than 44½ to 45½ pounds per bushel. As a matter of fact, however, the commercial shipments from the Inwood Plant were packed, Grimes 44½ pounds, Stayman 46 pounds and Golden Delicious 45 pounds. When packed, these packages presented a full, rounded appearance, and most of the U. S. Certificates issued against them read "pack tight" or "pack fairly tight," and it was evident that any more apples would have resulted in much damage from bruising. However, there was considerable complaint from the receivers of this fruit that the packages were "slack" upon arrival, and several cars that were placed in cold storage had to be "plugged" before shipment early in December.

Apparently the cause for much of this trouble comes from our present method of packing. When the basket is substituted for the metal tub, the paper lining has a tendency to keep the fruit from settling properly in the basket. Then, when it makes the journey to market or storage, the jolting in transit tends to settle it and it becomes "slack." As a check against this we hope to continue the study and compare ordinary export tubs with such packs as E. Z. Way in which the basket is packed from the bottom without the use of the metal forms.

Some of the details of the study on net weights are shown in Table IV.

Table IV.—*Showing Number of Apples (Per Bushel) With Bruises of a Serious Nature Caused by Contact With the Container or Other Apples.*

Variety	Packed Net Weight Per Bushel—Pounds									
	43½	44	44½	45	45½	46	46½	47	47½	48
WINESAPS										
No. 1 2½ up	7	7	8	3	3	12	19	20	20	24
2 bu. examined	7	9	7	10	5	8	19	20	23	24
Total	14	16	15	13	8	20	38	40	43	48
Average	7	8	7½	6½	4	10	19	20	22	24
RED DEL										
2¾ up	11	16	15	15	14	11	14	38	41	44
2 bu. examined	11	16	15	15	14	11	14	38	41	44
Average	11	16	15	15	14	11	14	38	41	44
GRIMES										
2½-2¾	16	18	32	41	38	42	45	55	68	73
2 bu. examined	18	13	23	25	26	30	21	.....	.....	.....
Total	34	21	45	66	64	72	66	55	68	73
Average	17	15½	22½	33	32	36	33	55	68	73
GOLDEN DELICIOUS										
2½ up	15	23	24	20	27	31	41	28	39	49
6 bu. examined	22	30	31	26	40	23	48	45	67	74
	24	12	31	29	25	31	40	31	62	33
	16	21	29	23	20	34	23	41	43	39
	26	23	22	26	30	29	26	36	34	45
	21	23	17	23	24	34	35	37	44	62
Total	124	152	144	147	166	182	203	218	289	302
Average	21	25	24	25	28	30	34	36	48	50
YORKS										
3″ up	.....	.....	5	6	7	10	12	16	17	16
4 bu. examined	.....	.....	3	9	6	6	6	19	21	21
	2	2	4	3	4	5	10	21	15	28
	6	6	9	6	7	8	19	21	18	25
Total	8	8	21	24	24	29	47	77	71	90
Average	4	4	5	6	6	7	12	19	18	22½
STAYMANS										
3″ up	8	12	11	18	15	26	30	31	39	33
2 bu. examined	18	16	18	14	22	27	27	26	28	26
Total	26	28	29	32	37	53	57	57	67	59
Average	13	14	14½	16	18½	26½	28½	28½	22½	29½
Average of all	14½	16	15	17	18	21	25	28	34	36

Conclusions:

1—Since a range of from 10 percent to 50 percent was found in the amount of bruising done by individual pickers and included in these figures is damage done by pulling the apples from the stems, which accounts for from 3 to 42 percent of the serious injury, it would seem that here is a place for growers to check the loss. The majority of apple pickers seem to be anxious to co-operate in this matter and if the owner will provide good equipment, give helpful suggestions for avoiding bruises and follow this up with frequent inspection of each picker's work, bruising by pickers can be materially lessened.

2—The average increase in bruises due to hauling from orchard to packing shed was slightly over 10 percent. Much of this could be avoided by (1) having boxes in good condition and seeing that they are properly filled; (2) removing stones and other obstructions from road, and (3) using more care and less speed in setting boxes on truck and on packing shed platform.

3—Bruising over the grader can be lessened only by re-designing these machines and eliminating many of the excessive "drops" from one unit to another. The liberal use of sponge rubber for padding will help and many machines would do better if they were timed to the speed required by the packing crew rather than to run them fast, overflow the bins, and then stop the machine until the crew catches up. Smaller packing bins, well-padded and with less slope, coupled with carefully-timed speed and regular feeding of the fruit to the grader should eliminate much of the injury.

4—Considerable portion of the bruising found in the packages can be charged back to the sizing machine. However, most of the serious damage in the package is caused by the pressure applied in lidding and by rough handling of the package after it is lidded. Buyers insist upon tight packs and, as a matter of fact, the fruit in a loose or slack pack seems to bruise just as badly or worse than it does when the pack is tight. However, this does not mean that packages should be over-filled. Attention to racking the basket while it is being filled and close supervision by the net weight of the contents would eliminate much of the severe bruising that is found when these matters are neglected.

5—The amount of bruising that occurs in transit and through storage depends in large measure upon the type of container and the manner in which the fruit was originally packed. *Well-built* export tubs with good lids seem to give better results than some of the newer packages, and the liberal use of shredded paper, good liners and paper cushions also is helpful in keeping down the number of cuts and serious bruises. More care in loading cars and trucks and less walking over the stacked fruit while loading and warehousing will likewise do much towards delivering the fruit in better condition.

6—No small part of the bruised condition of apples as they arrive on the market is due to over-filling the containers. An average net weight of 44 to 45 pounds per bushel would insure the arrival of fruit in much better condition than is possible when baskets are rounded up to hold 46 to 48 pounds as the trade demands.

Discussion led by W. C. Beaven, Maryland Department of Markets.

I don't know that there is much more that I can say. The only thing I know of is that we watch the hired help like hawks. If a man has done something, notify him. You just have to keep hammering away. Some of the boys pick the apples with a stick. You have to watch and see that such things do not happen. One thing that causes bruises is that you pile baskets eight or ten high when you put them in storage. You have, or will have, plenty of trouble in that respect.

LATE DEVELOPMENTS IN APPLE JUICE MANUFACTURE

A. Lee Schrader, Head, Department of Horticulture,
University of Maryland, College Park, Maryland.

This paper will be published in "The Maryland Fruit Grower" and issued as a reprint for the Proceedings.

Discussion led by Eugene W. Scott, Fruit Grower.

On our Rockville fruit farm we have found a growing demand for apple juice. We try to give the customers good, fresh cider with a good taste and attractive appearance. We have had about 5,000 gallons a year increase. We use good, clean apples with no rotten spots. In the height of the season, we make 1,000 gallons, or more, a day. We simply grind the apples, filter the juice, then refilter it and keep it on ice.

I have tried a great deal of cider that has been filtered quite a few times and I think it takes too much of the taste out of it. Our trade greatly prefers filtered juice.

THE "X" DISEASE, OR YELLOW-RED VIROSIS, OF PEACH

E. A. Walker, Assistant Plant Pathologist, University of Maryland,
College Park, Maryland.

A new virus disease of peach and choke cherry has become a serious problem in some peach growing districts in the northeastern United States. According to Stoddard (10), this disease was first observed in several Connecticut orchards during the summer of 1933. From these few orchards the disease has spread until a large number of orchards are now affected in Connecticut and adjoining states. Boyd (4) believes this disease in Massachusetts will cause more loss to the peach industry than any other peach disease. Since 1938, the "X" disease has been reported from New York, Massachusetts, Vermont, Illinois, and a similar condition has appeared in Idaho and Utah (2).

In more recently infected areas the disease appears first on the choke cherry (Prunus virginiana), while adjacent peach trees do not show any symptoms of the disease. All varieties of peach are susceptible, and the disease appears to progress more rapidly in the young orchards. The choke cherry, among the wild plants, is very susceptible.

This peach disease was called the "X" disease by Stoddard (10), and was later changed by Hildebrand and Palmiter (6) to the Yellow-Red Virosis, as it describes both the symptoms and the nature of the causal agent.

Stoddard (10) has found that the disease is transmitted from diseased trees to healthy trees by budding, while the expressed juice from diseased trees will not transmit the disease to healthy trees. No insect has yet been found to carry this virus disease.

The writer has observed this disease in the peach growing districts in Columbia County, New York. On the peach, the disease affects both the leaves and fruits. Peach trees in which the disease is not very far advanced, make a normal growth in the spring, and appear healthy. Toward the middle of June, small, water-soaked, yellowish, irregular spots appear on the basal leaves. These areas turn brown and dry out, and soon drop out of the leaves and produce an irregular, shot-hole pattern, which gives the leaf a ragged appearance. The leaves soon turn yellowish to red in color and drop off. The twig becomes bare except for a few leaves remaining at the tip.

The fruits on affected trees usually shrivel and fall soon after the appearance of the leaf symptoms. They may remain on the tree in mild cases and become mummies. Other fruits may ripen prematurely and have an extremely bitter taste. In these mature fruits there is no fully developed pit in the stone, and the seed is incapable of germination.

The wood of diseased branches has a brown streak extending longitudinally. The bark itself is redder in color in the fall on the diseased trees. Only one branch may show symptoms of the disease, or the whole tree may show the effects of the virus. The diseased peach trees may not die, as is common in peach "yellows," but are rendered valueless for fruit production due to the early dropping of the leaves and fruit one season after another.

The symptoms on the choke cherry are similar to those on the foliage of the peach, except the coloration is more pronounced and the leaves remain attached until late fall. The leaf colors vary from yellow, bronze to red, and the choke cherry foliage resembles autumnal coloration. A severe rosetting toward the tip of the stem and a rugose character of the leaves are final symptoms preceding the death of the choke cherry. These symptoms are absent in the peach.

It is believed by Boyd (3), Stoddard (10), Hildebrand and Palmiter (6) that infected choke cherries adjacent to peach orchards caused the rapid appearance of the disease on the peach trees, and that peach trees that were not in the neighborhood of choke cheries or were near

healthy choke cherry trees remained healthy. It is apparent that rapid spread of this disease through peach blocks is dependent on the close proximity of diseased choke cherry trees. The only means of controlling this peach disease at present is to eradicate the diseased choke cherry (7).

The "X" disease has not been observed in Maryland orchards, and with the limited occurrence of choke cherry in the State, except for areas around Smithsburg, Hancock, Cumberland, and Bittinger districts where the choke cherry has been found, the disease could easily be checked by the eradication of the choke cherry. There is a danger, however, that diseased peach nursery stock may be brought into the State from northern areas known to be in the diseased belt.

(A moving picture of color film was shown at the meeting, showing the symptoms of both the diseased peach and choke cherry trees. This film was prepared during a field meeting of Plant Pathologists interested in peach virus diseases at Hudson, New York, during the first week in August, 1939.)

Reference List

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2. Blodgett, E. C. *Some Obscure Peach Diseases in Idaho.*
   1939 Plt. Dis. Reptr. 23: 216-218.

3. Boyd, O. C. *Peach Virosis in Massachusetts.*
   1939 Plt. Dis. Reptr. 23: 259.

4. ———. *Distribution of "X" Disease of Peach in Massachusetts.*
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5. Hildebrand, E. M., and Palmiter, D. H. *"X" disease on Peaches in New York.*
   1938 Plt. Dis. Reptr. 22: 268.

6. ———. *Yellow-red Virosis of Peach and Choke Cherry.*
   1938 Plt. Dis. Reptr. 22: 394-398.

7. ———. *Yellow-red or "X" Disease: A New Threat to Peach Industry.*
   1940 Phytopath. (Abstr.) 30: 10.

8. Manns, T. F., and Hopperstead, S. L. *The "X" Disease of Peach in the Northeastern States.*
   1939 Trans. Penin. Hort. Soc. 1939, 29: 46-48.

9. Seifert, H. F., and Anderson, H. W. *Yellow-red Virosis on Choke Cherry in Illinois.*
   1939 Plt. Dis. Reptr. 23: 328.

10. Stoddard, E. M. *The "X" Disease of Peach.*
    1938 Conn. Agr. Exp. Sta. Circ. 122: 54-60.

COMMITTEE REPORTS

President Gardenhour called for Committee Reports.

Nominating Committee

Mr. E. D. McCain, Chairman, offered the following nominations which passed unanimously:

President—Joseph G. Harrison, Berlin
First Vice-President—W. Lee Allen, Salisbury
Second Vice-President—Stanley Fulton, Hancock
Secretary-Treasurer—A. F. Vierheller, College Park

Executive Committee

R. S. Dillon, Jr., Hancock
A. Lee Schrader, College Park
O. R. Higgins, Hurlock
Lloyd Balderston, Colora
S. B. Waddell, New Windsor
G. Wm. Gardenhour, Smithsburg
G. S. L. Carpenter, Hagerstown
G. Rust Canby, Silver Spring
Dwight Walker, Mt. Airy

Director to Maryland Farm Bureau, Inc., and Maryland Agricultural Society:

G. Rust Canby, Silver Spring

Delegates to Maryland Farm Bureau Annual Meeting:

H. C. Whiteford, Whiteford
J. Andrew Cohill, Hancock

Director, Appalachian Apples, Inc.:

Lloyd Balderston, Colora (re-elected)

Auditing Committee

Chairman Walter V. Spessard reported the Treasurer's books to be in order with proper vouchers supporting expenditures.

Resolutions Committee

Chairman B. Carlisle Barnes offered the following resolutions which were adopted with little discussion:

Be it resolved, that the Maryland State Horticultural Society having recognized the value of the Japanese Beetle retardation program and by resolution and active support has helped to further the project; now desires to commend the help given by other organizations in this project; especially the whole-hearted moral and financial cooperation of the several Boards of County Commissioners and the officials of the University of Maryland.

Whereas, the cull apple problem has proven to be a serious matter in the orderly marketing of apples in the Cumberland-Shenandoah Section and

Whereas, definite action in this matter is being considered by some of the Horticultural Societies in nearby States, be it hereby

Resolved, that our Society is in favor of joining in some effective plan regarding the cull problem, and be it further

Resolved, that our President be instructed to appoint a committee of growers representing this Society, to meet with possible similar committees appointed by the Horticultural Societies of Virginia, Pennsylvania and West Virginia, for the express purpose of formulating some definite plan to attack and solve this cull apple problem.

Whereas, the City of Hagerstown seems to be the best location for the annual meeting of this Society, due to location and other conveniences, and

Whereas, it has been desirable to include commercial exhibits of orchard machinery and supplies, which have added much to our meetings,

Be it resolved, that the Executive Committee be requested to consider Hagerstown as a place for future meetings, and that the President be requested to appoint a committee to consider any suitable location in Hagerstown where it will be possible to combine commercial exhibits with the regular meeting.

Whereas, Appalachian Apples, Inc., has done a highly commendable service to the fruit industry of the Cumberland-Shenandoah section in popularizing the apple and in increasing the use of this fruit, through many lines of activity,

Be it resolved, that this Society go on record as heartily favoring the continuance of our cooperation with Appalachian Apples, Inc., and be it further

Resolved, that we commend the good work of the Secretary-Manager, Carroll R. Miller.

Whereas, the bushel package situation is in a chaotic state, due to the fact that there are so many different sizes and types of boxes and styles of packs, resulting in some growers delivering to the trade as much as one and one-fourth bushels of apples in a so-called bushel box;

Therefore, be it resolved, that the President of this Society is hereby instructed to appoint, after due deliberation, a committee of three members, representing the main growing sections of the State, which committee is to meet in the near future and recommend a practical, uniform box and style of pack, holding one bushel of apples, with sufficient tolerance to offset any reasonable shrinkage in storage; and further urge the use thereof by the growers of this State and surrounding States.

Be it further resolved, that the above-named committee contact the heads of the Horticultural Societies of West Virginia, Maryland, and Pennsylvania, requesting that they appoint similar committees to endeavor to work out means by which the box can be standardized.

Be it further resolved, that representatives from the four States get together and standardize the size of the box.

Be it resolved, that we hereby express our thanks and appreciation to the President, who has served us well during the past two years; to the Executive Committee and Program Committee for this program; to the speakers who have suffered much inconvenience to be present to give us their valuable information and advice; to the Staffs of the Experiment Station, Extension Service, and various other Departments of the University of Maryland for their exhibits and cooperation; to the Maryland Fair Board for financing the Apple Exhibit in Baltimore; to our commercial advertisers; to the management of the Y. M. C. A. for their many courtesies, and to the Secretary-Treasurer, Mr. A. F. Vierheller, for his untiring efforts in making our meetings instructive, pleasant, and successful.

Whereas, the sudden passing of Professor Jacob Elry Metzger, Director of the Maryland Agricultural Experiment Station, and Head of the Department of Agronomy, University of Maryland, is a distinct loss to Maryland agriculture, and an irreparable loss to his host of friends,

Therefore, be it resolved, by this Society, that a letter commending his services to the State, and expressing the sympathy of this Society, be sent by the Secretary, to the widow of Jacob Elry Metzger, and become a part of the records of this Society.

Adjournment.

REPORT

OF THE

THIRTY-THIRD ANNUAL MEETING

OF THE

Maryland Crop Improvement Association

Baltimore, Maryland
January 10, 1940

AND OF THE

STATE CORN AND GRAIN SHOW

PROGRAM

MORNING

A. M.

10:00—Call to order by Edwin Warfield, Jr., President.

10:05—Appointment of Committees.

10:10—Lespedeza in Maryland, by Dr. W. B. Kemp.
Discussion led by J. Z. Miller, County Agent, Cecil County.

11:15—Pasture Fertilization by Dr. R. P. Thomas.
Discussion led by M. D. Moore, County Agent, Washington County.

12:00—Recess for Lunch.

AFTERNOON

P. M.

1:00—Seed Certification in Maryland by Albin Kuhn.

1:30—Results of Hybrid Field Corn Demonstrations by John W. Magruder.

2:00—Farm Erosion Control Practices by Martin S. Beachley.

2:30—Business Meeting.

3:00—Adjournment.

Plan to attend this meeting and bring a neighbor along. Everyone is invited to attend and participate in the general discussion following each address.

LESPEDEZA IN MARYLAND

W. B. KEMP

When white men settled in America the Atlantic seaboard was forested. With clearing of the forests forage and pasture plants were introduced from Europe. Almost without exception these plants produce but little growth in the hot and sometimes dry weather of midsummer in Maryland. At a much later time common lespedeza found its way into the southern states and has gradually spread northward. More recently Korean lespedeza was introduced and is now grown successfully over much of this state. These two lespedezas are finding an important place as pasture plants to provide grazing during midsummer when pasture plants of European origin make but little growth. Korean lespedeza is proving also to be a valuable plant for hay where soil conditions are too unfavorable for successful growth of clover.

Common lespedeza will grow even where the soil is very poor, wet or acid. This plant is found volunteering and reseeding itself throughout the Eastern Shore, Southern Maryland and in central Maryland at elevations up to about 600 feet. However, commercial plantings from southern seed frequently fail to mature, even in parts of Southern Maryland and the northern Eastern Shore.

Korean lespedeza requires somewhat more favorable conditions for satisfactory growth than are required for the common variety. However, it can be depended upon to mature seed and hence, maintain a stand permanently throughout those parts of Southern and Central Maryland where elevations are below 600 feet; in fact, wherever frosts usually are delayed until late September.

Common lespedeza cannot be depended upon for hay this far north, but even though production is relatively low it will outlast any other variety either under very close grazing or in competition with bluegrass. The Kobe variety produces yields of either hay or pasture comparable to those of the Korean variety. However, it will reseed only in the southern part of the state. Therefore, this discussion will deal chiefly with Korean lespedeza.

As a pasture plant, lespedeza is usually grown either alone or in mixture with a bunch grass such as orchard grass. Seed is planted in the spring, usually in small grain in late Februray or March. Without the protection of small grain, seeding should be delayed until April because the young seedling may be injured by a late frost. Throughout the southern part of the state inoculation is usually present in the soil. However, near the northern boundary of its growth artificial inoculation is desirable as an insurance for the first planting on any field. Even though this plant will grow under conditions of deficiency in lime and phosphorus, the low analysis of these materials in plants grown under such conditions may fail to provide these minerals in quantities sufficient for young stock or milk cows. Therefore, reasonable amounts of calcium and phosphorus should be applied to the soil.

When planted alone for pasture the first year, about 20 pounds of seed is recommended. Natural seeding is usually so abundant that the plants from three to five pounds of seed will produce enough for a full stand in the second year. When planted in mixture with orchard grass, not more than five pounds of lespedeza seed should be used because a thick stand the first year may smother the young grass plants before they are large enough to withstand competition. In such a mixture orchard grass will provide all of the grazing until some time in June when lespedeza will have grown sufficiently to provide grazing throughout the summer.

Pure stands of lespedeza are likely to become weedy in the spring. To overcome this difficulty and to provide abundant spring grazing under such conditions one may disk the lespedeza lightly when the first seed is mature in the fall and plant rye and domestic rye grass with a little fertilizer. One bushel of rye and ten pounds of domestic rye grass seeded in the fall and grazed short enough the following spring to prevent smothering of the lespedeza will usually provide pasture and keep down the weeds until June when the lespedeza has made fair growth.

The best and cleanest first year hay is usually obtained from seedings as heavy as 25 to 30 pounds per acre. The hay approaches alfalfa in nutritional value and is easy to cure. Frequently, it can be cut after dew is off in the morning and put in the barn late in the same day. However, in such thick stands no seed will be produced after haymaking for the next year's crop. Some growers overcome this difficulty by cutting the hay high in late July and accept a reduction in yield. Others remove a blade from two places in the cutter bar to leave uncut strips for seed production. Others cut so late that some seed shatters and obtain hay of reduced quality. Usually hay is cut in the last year of the stand so that reseeding is not necessary. The average hay yield for the United States is about one ton per acre with yields slightly higher in the northern part of the producing area where Korean lespedeza is grown almost exclusively.

In a rotation where clover and timothy follow wheat, from three to five pounds of lespedeza seed may be planted with the clover in order that lespedeza will occupy those areas where the clover does not catch. This practice is particularly desirable where success with clover is questionable and where pasturing is practiced on the aftermath or in the second year that the land is in grass.

J. Z. Miller: Mr. Chairman and Gentlemen of the Crop Improvement Association:

I have been asked to lead the discussion regarding the use of lespedeza on Maryland farms. I am supposed to get you fellows to discuss the subject and tell of your results with lespedeza rather than to do very much talking myself. However, before we throw the subject open for general discussion, I should like to make a few brief remarks regarding results with lespedeza in Cecil County.

In 1933 the farm magazines of the Southeastern United States carried many articles about the success of lespedeza. As a result, Cecil County farmers became very much interested, and came into the office to get further information. I suggested that we make a series of field trials in the county to determine what results could be secured from lespedeza. Ten farmers made field trials with lespedeza as suggested. Based on these results, I have since recommended that farmers seed a little lespedeza in any pasture mixture, both permanent pasture and rotational pasture. In a number of cases the lespedeza would not give sufficient growth to justify using it as a hay crop; however, in a few cases it has been cut for hay and has given fair yields.

I shall now like to hear of the results that you men have had with lespedeza.

Robert H. Baker: We have rotation pasture only. The first few years we farmed the pasture was eaten down or dried up within four to six weeks after turning stock on it.

About 20 years ago, we got some common lespedeza seed. A friend said it was a pest and a nuisance and that caused me to want it still more as an experiment. It was seeded several places on the worst land we had. The cows liked it and milked so well on it that we used it for about five years. Since then we have been using Korean lespedeza with better results.

In seeding we use three pounds of lespedeza per acre, mixed and sown with the red clover. To get an even distribution, I again mix seed in the seed box when it is about half sown out. Seed is sown on wheat or barley in the spring, in March if possible. The following summer or fall we pasture this young grass. When it is mown for any purpose, we mow as early as possible and tilt the guards up high in order to allow the stubble to make seed.

The second year this field is hay. When cut for red clover, the mower runs over the lespedeza; when cut for timothy, we get about a six inch clip of lespedeza, which improves very materially the quality and quantity of the hay.

From 30 to 40 days after the hay has been cut, under normal weather conditions, we have been able to run one animal per acre until a killing frost. The third year this is pasture. About the time the clover and timothy pasture is eaten down and dried up, the lespedeza comes through and with favorable weather makes a tremendous growth. We have been able to pasture an animal per acre throughout the remainder of the year.

After harvest we shift our cattle from one field to the other which makes an abundance of pasture and at the same time allows the lespedeza to make lots of seed. In 1939, due to the cold spring and dry summer, the lespedeza on the pasture field was somewhat short but after harvest there was plenty of pasture on the hay field.

Lespedeza has solved our pasture problem. We used to grow corn, sowing it and cutting it while green to feed to the cows. When cows

come to the stable from good lespedeza pasture they refused to eat the green corn.

Some people have questioned whether three pounds of Korean lespedeza per acre is sufficient to plant. If I wanted a lot of pasture from it the first year, then I would sow much thicker but having time to wait for it to make seed is my reason for sowing it thinly.

One day last week I walked over my lespedeza which was sown last spring. I stripped the seed off one plant and rubbed out 45 seed. I am going to continue sowing three pounds per acre. For about ten years I experimented with lespedeza; for the last ten it has been a necessity for late summer pasture.

William Powell: We find Korean lespedeza indespensable as a mid-summer dry weather pasture for dairy cows. It is also superior to ordinary pasture for finishing steers.

We have harrowed lespedeza ground in the early spring and sowed oats, harvesting a crop of oats and then have grazed the lespedeza the same year.

We have made rough hay from lespedeza by cutting it after the seed is ripe enough to shatter. This hay has been fairly palatable and nourishing.

If lespedeza is cut too late there will not be sufficient seed left on the ground to make a full stand another year.

Leonard A. Renshaw: The first lespedeza that was seeded on the Eastern Shore to the best of my knowledge was seeded by a man from South America (Mr. H. O. Yarrow) who purchased a farm near Princess Anne, Somerset County, Maryland, in 1912.

On the farm was what had at one time been a lawn of about 15 acres, with trees up to seven feet in diameter.

The place had been used as a junk yard for many years.

Mr. Yarrow cleared the junk from the yard, disked and leveled the ground as best he could and seeded lespedeza.

Sheep were grazed on the yard that summer and I have never seen a more beautiful crop of lespedeza.

Because of the war it was many years before I had the opportunity to get back on the farm. In 1931 a permanent pasture was seeded on Spring Cove Farm with common lespedeza. In 1933 Korean lespedeza was seeded on the thin spots. In the spring the mixed grasses furnish pasture, and a cutting of hay when the growth is more than the cattle can eat. When the weather gets hot and the mixed grasses begin to burn, the lespedeza comes in and furnishes pasture until frost kills the grass. I might add that cattle grazed on lespedeza when it is making seed will put on a finish equalled by no other pasture that I have seen.

We have the pasture divided in three parts and do not graze all three at once, we believe that a much better pasture will be the result of the rotating method of grazing.

James Galbreath: We planted a field to lespedeza and neglected to inoculate the first seed that was planted. The lespedeza in the uninoculated area was much poorer than the rest of the field.

Edwin Warfield, Jr.: I have found seeding sweet clover and Korean lespedeza a good practice. Don't seed the sweet clover too heavily. It should be planted only where there is sufficient lime in the soil.

Joseph Franze: I have been growing Korean and common lespedeza for pasture with good results. I have also grown Korean lespedeza for hay. The average yield per acre by weight in 1938 was 1.8 tons and in 1939 1.9 tons. This was for 80 acres in five different fields.

PASTURE FERTILIZATION

(Abstract)

R. P. THOMAS

Pastures wear out and run down the same as other things in nature. This wearing out of pastures is really the dying of the desirable grasses and their place being taken by weeds. Plants are really living things that have to have food to exist and grow just the same as man or animals. Unlike animals, our plants are unable to move about and have to stay in one place throughout their existence. When the plants have used up all the food available, they cease growing. This is plainly illustrated in the old and run down pastures.

Soils are not different from other things in nature. They are constantly changing. As a rule, the majority of these soil changes produce poorer rather than better soil conditions. Soils are formed by the breaking down of rocks and the mixing of these small particles with various kinds of rotting and rotted crops and animal residues. This breakdown or decomposition of the rock and organic material takes place so slowly that it is not noticed by the average individual. During this soil weathering the foods for the plants are liberated or released for use by the plants. As long as the rock and organic material, which are decomposed, contain sufficient amounts of the plant nutrients they may be made available to the plant. However, when the soil no longer contains enough of these needed nutrients they cannot be released in the soil. Then the plant cannot obtain sufficient food and either doesn't grow or dies.

The plants are continually removing this soluble material for their own growth. The roots absorb it along with the soil water and utilize it in producing roots, leaves, stems and various other portions of the plants. When all of the vegetation or green growth is removed, then the plant food utilized in producing this material is taken away from the soil. If this green material is eaten by grazing animals, then a part of the plant food is returned to the surface of the soil by the droppings of the animals. However, these droppings cannot be utilized as such by the growing plants. They have to be decomposed or rotted. In this change there is another opportunity, the same as there was in the

original weathering of the rocks and organic matter, for the plant food to be carried on out of the reach of the plant roots by the water movement through the soil. Most of the experimental data indicate that a very large portion of the food contained in the plant which is eaten by animals never is taken up again by the growing plants. One can easily see then how our soils have a tendency to become less fertile instead of more fertile.

The plant nutrients in the soil can be divided into two classes, those which are readily available, and those which are slowly available. The readily available is that form held by the clay fraction and the slowly available is that portion existing in the undecomposed rock and organic matter. If the soil contains only a small amount of this colloidal material, it cannot hold in a readily available form much plant food. The close grazing of pastures and the constant destruction of the soil particles, especially the organic portion, work towards a reduction in the ability of a soil to supply the pasture plants their needed nutrients. Soils which are either low in plant food or cannot hold it in sufficient quantities for the growth of plants have to have assistance in maintaining a satisfactory fertility level. This is usually given to the soil and plant in the form of lime and fertilizer. As a rule, pasture soils need lime, nitrogen, phosphorus and potassium.

Lime supplies the bases such as calcium and magnesium which have been lost from the soil or are not there in sufficient quantities at the beginning. The amount of lime to use will depend upon many factors. It can only be properly estimated by making a soil test and then considering all of these factors. As a rule, it is more economical to lime oftener and use smaller amounts. The form of lime will be governed by the cost, fineness, distance to haul, etc. It may be best to lime pastures in the fall or early winter so the freezing and thawing can help work it into the soil. One of the most important things to consider in regard to liming is the kind of lime. If a magnesia lime is needed, little value will be secured from the use of a high calcium lime. The same can be said in regard to the use of a high calcium lime. Pasture grasses or herbage must supply the animals with most of the calcium and similar materials. Liming a soil is the most economical way to supply this portion of the desired bone-building material to the animals.

Although most of the Maryland pasture soils need lime, their greatest need is phosphorus. There are several reasons for this great need but the chief ones are the low content in our soils and the tendency to change to a less available form. Better and healthier animals are obtained from grasses high in phosphorus. The maintenance of a large amount of available phosphorus in the soil is very desirable, yet very difficult. Keeping the soil well supplied with lime and organic matter has aided considerably in getting the phosphorus to move downward and stay in the available form longer. Scratching the surface with a disc or spring tooth harrow after applying the fertilizer also aids in getting it down into the soil. Phosphorus is generally applied in the form of

super-phosphate or acid rock as some call it. However, it can be applied in the fine ground rock form if the price is right or in one of the products put out by the T. V. A. Phosphorus gives the best returns when applied in the fall, as freezing and thawing help work it into the soil.

Many of the pasture soils in Maryland are definitely in need of potassium. This element will move downward more rapidly than the phosphorus but the movement under ordinary pasture conditions is seldom great enough to produce a loss by leaching through the soil. Potassium is seldom applied alone to pastures but generally as a constituent of a mixed fertilizer. As a rule, it is applied along with phosphorus in the fall. If legumes are desired in the plant mixtures, then it is very essential that the soil contain sufficient potash.

Nitrogen is also a very essential constituent of the pasture plants. It is one of the elements which move very readily in the soil. If it is not utilized or taken up soon after it is applied to the soil, it may be lost by leaching. Nitrogen increases very rapidly the top growth of the pasture plants. However, this stimulation may be injurious in the end by increasing the top growth without a corresponding increase in the roots. Nitrogen can be applied in many forms although it is generally applied with a complete fertilizer, in the form of manures, or through the legume plants. If the legumes are not an objectionable plant in the pasture, this is usually the most economical way to add the nitrogen to the soil. Nitrogen should be applied either in the spring or early fall. Do not apply it when the soil is frozen or too wet for the plants to be growing or a large part of it may be lost.

Manure is a very valuable source of plant food and other plant stimulants. No commercial product has equalled it. However, unless there is an abundance of manure on the farm it would probably be best to use the manure on the cultivated crops, such as corn. If you have bare or thin spots in your pasture, nothing will equal a heavy application of manure. Manure is not a well balanced fertilizer as it is low in all constituents of mixed fertilizers and especially phosphorus. It does contain very valuable growth promoting substances. Manure may be very undesirable because of its weed seed content. A very large portion of the valuable constituents of manure is lost when it is applied to the surface, as on pastures. Manure has to be worked into the soil to secure its greatest benefit to the growing crop.

Any of these deficiencies of the plant nutrients in either the soil or plant may be corrected by adding some carrier of the needed substance to the soil. These materials, with the exception of manure, lime, and sometimes phosphorus, are usually applied in the form of commercial fertilizer. The general formulae recommended for use in Maryland are: 0-20-0, 0-14-6, 4-12-4, 4-16-4, and 6-8-6. The exact formula will depend on a number of conditions, such as, soil, pasture plants, previous treatment, and management practices. Our experience has shown that fertilization in the fall is more satisfactory except when considerable

nitrogen is used. In general, it was found that a light application, 200 to 300 pounds per acre applied annually, was better than large amounts applied less frequently.

There may be some places in Maryland where other plant nutrients than nitrogen, phosphorus, potassium and lime may be needed. This will depend on the soil, management and type of livestock. Such chemicals as copper, zinc, manganese, boron, iron, iodine, etc., may be needed for production of the very best of some animals. All but the iron and iodine can be easily increased in the herbage by applying small amounts to the soil. These small amounts of the respective salts are usually mixed with the fertilizer. Care should be exercised in applying these uncommon nutrients as too much may be more harmful than not applying them at all.

Any discussion of pasture fertilization would not be complete without a little attention to management. If the weeds are permitted to seed, the desirable plants are not encouraged by seeding or the plants are grazed closely, considerable benefit of any method of fertilization is lost. Clipping, seeding, and grazing restriction, when needed, are just as important as building a bank for the storing of plant nutrients and the applying of these nutrients to the soil. Good pastures are obtained only by having favorable soil conditions for the right plants to make their home in this soil.

M. D. Moore: Mr. Chairman:

As an introduction to the discussion, I would like to give results of some pasture fertilizer demonstrations in Washington County and vicinity.

The first was a rotation pasture on the farm of Wilbur F. Barkdoll near Waynesboro, Pa. Mr. Barkdoll maintains a herd of about 55 cows on a farm of less than 100 acres and consequently has very little acreage for permanent pasture. Most of his grazing is done on a three-year rotation of corn, wheat and grass. The corn, which is grown for the silo, is followed by wheat seeded at the rate of 30 quarts per acre with 6 pounds of timothy per acre at wheat seeding time. Early the following spring the wheat is harrowed, at which time the following mixture is seeded on each acre:—8 lbs. alfalfa, 6 lbs. red clover, 1 lb. alsike clover and 1 lb. ladino clover. In the years when a poor stand of timothy is secured Mr. Barkdoll seeds orchard grass on these rotation plots at the rate of 10 lbs. per acre. Some grazing is done during the fall after wheat harvest. The next year the plot is grazed heavily. In this heavy grazing about 2 acres are fenced off for grazing, using a one-wire fence charged with electricity. The whole herd of cattle is grazed for about 2 hours on this 2 acre plot daily until the cattle have grazed it down. They are then moved on to the next two acres. This rotation grazing is kept up until winter sets in.

The lime, manure and fertilizer treatment of this three-year rotation is as follows: Lime in the form of marl is applied every six years at the rate of one-half ton more than the soil test for lime requirement

shows. The fertilizer used in the rotation is 20 per cent superphosphate at the rate of 300 lbs. per acre at wheat seeding time, and, in addition, the young grass, early in the winter after the wheat crop, is top dressed with fresh manure from the gutters of the milking shed at the rate of 8 spreader loads per acre. This manure is reinforced with 20 per cent granular superphosphate applied in the barn at the rate of 1½ lbs. per cow per day. Sample weighings show that this practice gives an application of about 320 lbs. of superphosphate per acre. A similar application of reinforced manure is applied to the sod late in the winter of the third year of the rotation. This makes a total of 940 lbs. of 20 per cent superphosphate per acre each three year rotation.

During the third year, or intensive year of grazing, in 1939 the weight of forage was determined as follows: The forage was clipped from sample areas 4 ft. by 4 ft. screened from grazing by means of woven wire cages. This grass was clipped approximately at the same time the grazing was done. The first clipping was made on May 23 at which time grazing was started. The second clipping was on June 26. After a dry spell the third clipping was made on August 2. Then, after a rainy spell, the fourth clipping was made August 19. After a dry fall the last clipping was made on November 11. From these samples the weight of green forage per acre was 42,800 lbs.

On a permanent bluegrass pasture on the farm of J. Hugh Warrenfeltz near Smithsburg, one part of the pasture is almost level land. The upper part is about a 15 degree slope. On this upper portion of the pasture contour furrows were run at 18-inch vertical fall between each two furrows. Early in the spring of 1939 this contoured portion was top dressed with 200 lbs. per acre of 3-12-6 fertilizer. The lower part was top dressed with a lime waste product from the North American Cement Company's plant at Security at the rate of 1,000 lbs. per acre. This lime material contained 5 per cent of water soluble potash. Mr. Warrenfeltz thinks he got fully as much grazing per acre last year from the contour furrowed part of the pasture as he did from the lower meadow. Before this portion was contour furrowed the bluegrass was always brown and semi-dormant during the late summer and fall but last year the sod remained green throughout the year.

A permanent bluegrass sod on shale soil on the farm of C. H. Locher, Hancock, was seeded with Korean lespedeza early in April 1939, at the rate of 15 lbs. per acre. The lespedeza seed was not covered. This plot of 17 acres had been limed to bring the surface 6 inches of soil to neutrality. Late in the fall of 1938, 16 per cent superphosphate was applied at the rate of 400 lbs. per acre. On August 24, thirty head of midwestern grown steers were turned on this pasture and grazed until September 23. During this 30-day period they gained an average of 2.86 lbs. per head daily. They had nothing in addition to the grazing except salt and water. The cattle after being shipped to Hancock had been grazed on a mountain pasture for two months where they had made only slight gains.

After this grazing period, the pasture was allowed to rest until the first of December when it furnished excellent grazing for another 2-weeks period. I do not have the gains made during this second grazing period. An examination of this bluegrass-lespedeza sod after the second grazing period indicates that there is an abundance of lespedeza seed for reseeding for 1940.

Question by President Warfield: Mr. Moore, you stated that one of your cooperators is using orchard grass. I cannot seem to get bluegrass to grow on my farms. When and how should orchard grass be seeded?

Answer by M. D. Moore: Orchard grass may be seeded almost any time, but it seems to do best when it is seeded either real early in the spring or real early in the fall. Since orchard grass seed are very light and chaffy it is almost impossible to get a regular stand when the seed are broadcast by one of the hand seeders. And when seeded through the grass seed box of a grain drill orchard grass seed has a tendency to bridge over and thus does not feed regularly through the drill. This can be avoided by seeding orchard grass through the fertilizer box of the grain drill. And, if fertilizer is being used, it apparently does not injure the germination of orchard grass seed to mix it with the fertilizer.

SEED CERTIFICATION IN MARYLAND

ALBIN O. KUHN

Inspection and certification of small grains and soybeans has been carried on for a number of years in Maryland. This has largely been the responsibility of the Extension Agronomist, acting as a representative of the Seed Certification Board, and cooperating with the Experiment Station, the Extension Service, and the Maryland Crop Improvement Association. Certification has operated long enough for the regulations, standards, and procedures to have become rather stable; however, there are several changes that were deemed essential to the continued progress of the program. The discussion of these changes is the burden of my talk here today.

Two classes of seed have been maintained in the certification program in Maryland since its beginning; the Certified class and the Listed class. The Certified class has always been highly regarded and has served the purpose for which it was established. The Listed class has not proved of much value, as farmers and seedsmen have come to look upon it as a "catchall" class into which all grains that do not meet certification standards are placed. In reality, seed that is placed in the Listed class has to meet the same standards as seed that is placed in the Certified class other than for varietal purity. As high as five percent of varietal mixture has been allowed in the Listed seed while only one percent has been allowed in the Certified seed. During the years which certification work has been going on in the State we have come to

recognize that while it is essential that sources of seed of high varietal purity be available, it is not objectionable for the great bulk of seed planted to have some varietal mixture. To give this seed that was formerly known as Listed a name that more clearly indicates its value we have decided to rename it State Approved Utility Seed.

One of the shortcomings of seed inspection and certification work in Maryland has been that the farmers participating in the program were centered in too few counties of the State. Often, when requests for information as to sources of seed have been made, the sources of the type of seed desired have been so far from the person requesting the information that local, uninspected seed was planted instead of going to the added expense and possible delayed seeding. It is expected that the introduction of the State Approved Utility Class will encourage more farmers to enter the program and will result in both increased supply and greater distribution of sources of inspected seed.

To pass on to another change in the certification program I would like to point out that since the past growing season the selection 19-8 Smooth Awned Barley has been removed from the recommended list and shall therefore no longer be eligible for certification. To show why this was done I will go back into the history of the introduction of smooth awned selections to the farmers. After the Experiment Station had developed a number of barbless selections by breeding, these selections were tried out from 1928 until 1935 when all had been discarded except selection 19-8 and selection 13-6. These two selections were so close together in their responses that it was decided that small quantities of each should be released to farmers for increase purposes. Further comparisons of these two selections have proved that while they are quite similar in most characteristics, the selection 13-6 stands up better because of stiffer straw and produces more straw, particularly when grown on land or low fertility. In order to prevent confusion and avoid the possibility of mixture of the two selections, it was decided that 13-6 be named Marnobarb and be continued on the recommended list, while 19-8 be removed from the recommended list.

While on the subject of Marnobarb barley, another factor comes to my mind. At present, there is not very much of this variety that meets the certification standards, in most part because of the percentage of rough awned mixture found in it. This will necessitate the coming back to foundation stock by a number of growers in order that the smooth awned characteristic can be maintained to a high degree. Another factor which has become a problem in connection with Marnobarb barley is the prevalence of loose smut which at times may occur on as high as 12 to 15 percent of the heads, causing a reduction in yield of grain. This disease is carried within the seed and cannot be controlled by the ordinary dusting methods with which we are all familiar, but necessitate treatment of the seed with hot water. This is a delicate operation, as the temperature at which the disease is killed is only a few degrees below the temperature at which the germination of the

barley is killed. Some quantities of the seed were treated in the State last year, but it is not possible to determine the success that was obtained until the presence of the disease is observed on the barley as it matures this spring.

Lately a new phase of work has come into the certification program; that is the inspection of the production of hybrid seed corn. Last year we were called on to inspect approximately 300 acres of land devoted to the production of hybrid seed corn to be sold to farmers for planting during the 1940 season. We carried out no certification program but furnished a service to check on the accuracy and completeness of the procedures of seed production. During the growing season this year we expect to certify hybrids.

Another factor which is coming into the picture and which will to a greater or less degree affect certification work is the new Federal Seed Law which goes into effect February 5, 1940. The rules and regulations of this law have just been released and as yet there has not been time to determine what their affect on our present program will be. It may necessitate some drastice changes in policy.

In conclusion, I wish to point out that seed inspection and certification is not glamorous work by which great results can be accomplished overnight, but rather a long-time proposition requiring adherence to rules and regulations year after year. The whole object of the program is to bring to as many farmers as possible better seed so that they may thus utilize to the fullest extent the advantages of improved varieties.

FARM EROSION CONTROL PRACTICES

By Martin S. Beachley

I have been farming for the past two and a half years under a soil conservation plan drawn up by the Soil Conservation Service. The plan has worked out very successfully thus far and I am more than pleased with it, as it not only saves my soil but saves expense in operating my farm and gives me a better return in terms of yields.

My farm is located 2½ miles southwest of Middletown. There are 162 acres in it and I ship milk to Hagerstown.

In the season of 1936, I had a considerable amount of erosion on Field No. 9, which was in corn. (Points on map illustrating farm lay-out). I had checked my corn. This necessitated that most all rows run up and down grade at some point. In the fall, while hauling corn out of this field, I noticed that every row had a small gutter an inch or more in depth. This is where my soil was going.

It so happened that a contact man from the Soil Conservation Service came out one day while I was hauling fodder out of the field. He told me that they could stop this erosion. My problem was no different than that of almost everyone else who was farming the Middletown Valley.

Realizing that if this erosion kept up every year I would soon have no topsoil left, I was willing to try anything.

They laid out my farm and today I am farming across the slope on the contour. In this way, I believe I am holding about 60% of the moisture as well as the soil. I am also strip cropping my farm and they have laid out terraces to obstruct the surface run-off water and carry it to the side. Now, every row acts as a dam and holds the soil on the hill.

MR. MAGRUDER: What are those green areas on the map?

MR. BEACHLEY: That designates all of the permanent pasture. Under the strip-crop system it is difficult to pasture your strips because so much fencing would have to be done. This permanent pasture idea is good and it allows you to put your hilliest land in pasture so it won't wash and also have that much less plowing to do, as I plow only the cultivated land now. I used to plow 145 acres. Now I plow only 115 acres.

MR. WARFIELD: Do you have any pasture furrows?

MR. BEACHLEY: No.

MR. HARRY: I have pasture furrows on my farm and find them very successful. My brother-in-law made a considerable amount of fun of this to start with, but now he sees how they hold the water.

MR. MAGRUDER: What are those curves on that field? (Points on map).

MR. BEACHLEY: Those are fields of contour strips. That is where we have used just strip-cropping alone to control erosion. We do this by always leaving a crop of hay or some close-growing crop below our corn strips. In that way, the speed of the water is reduced to avoid erosion. The fields lay like long bands around the hill, always on the level.

MR. WARFIELD: Is it any more trouble to cultivate on the contour?

MR. BEACHLEY: No, and it is much easier. The rows are longer than ever before, so I don't have to turn around as often. That saves time.

MR. WARFIELD: Can you keep your corn clean by contour cultivation?

MR. BEACHLEY: We have had no trouble at all. I have seen just as weedy corn where the corn has been checked as where it was not.

MR. HEAPS: I have been in this program several years and find that what Mr. Beachley has had to say is right. If there is any extra cost in contour strip farming, it is more than paid for by the increased yields through conserving the moisture, fertilizer, lime and the soil.

We practically lose no soil under the contour farming method and use more hay and permanent pasture.

Our pasture furrows have proved very successful. They hold the water on the hill during the dry months of the summer when our rains come in torrents of a few minutes duration.

MR. HAGUE: Do you experience any difficulty in clipping your pasture, where there are pasture furrows?

MR. HEAPS: None at all, because we mow parallel to the furrow and not across.

MR. WARFIELD: Do you notice that the grass is higher on pasture furrows?

MR. HEAPS: No. The cows keep the pasture grazed down fairly well.

MR. WARFIELD: Do you find the terraces more unproductive than the rest of the field?

MR. COTTON: Where possible, these terraces are made by first removing the topsoil, then building the terrace out of subsoil and then moving the topsoil back over the top of the terrace.

MR. HARRY: My diversion terraces are producing as good growth on the terraces as on the rest of the field.

RESULTS OF HYBRID FIELD CORN DEMONSTRATIONS

JOHN W. MAGRUDER

Twenty-one hybrid field corn farm demonstrations were conducted in 18 of Maryland's 23 counties in 1939. The purpose of these demonstrations was to make comparisons of some of the corn hybrids that were superior in Experiment Station tests, with local open-pollinated corn grown under ordinary farm conditions. An effort was made to conduct the demonstrations under as wide variation of conditions as possible.

The demonstrations were in charge of the Extension Agronomist in cooperation with the respective county agents and local farmers. The Experiment Station assisted in securing seed, in running moisture tests on samples of harvested corn and in calculating yields.

The general plan of the demonstrations was to plant four rows each of a number of corn hybrids across the field beside the farmer's local corn and one or two popular varieties of open-pollinated corn. The method of planting and cultivating was the same in each case as the cooperating farmers had been practicing in the past.

At harvest time, 25 normal hills, that is hills having the same number of plants, surrounded by similar hills, were harvested, weighed and moisture samples taken in order to adjust the weight to a uniform moisture percentage. As far as possible the 25 samples were selected by taking five sub-samples down one row, a definite number of hills being skipped between each sub-sample to avoid the personal element entering into selection and to aid in evening up any variation in soil conditions.

Most of the hybrids in the demonstrations yielded as well or better than the local corn. Several hybrids consistently yielded higher. In general, there was less difference in yield between the hybrids and local corn than between hybrids and the varieties used as checks. This difference in favor of the local corn is apparently caused by weather conditions favoring the local corn which was somewhat earlier than the varieties used as checks. Medium to early maturing hybrids and varieties yielded relatively better in 1939 than late maturing corn.

One striking difference between hybrids and the varieties was in lodging. A wind and rain storm on August 19 blew down corn over

a wide area. Much of the local corn was blown down and tangled badly. The majority of the hybrids were but little affected.

The inherent capacity of hybrids to withstand drought was observed. The hybrids, in general, showed less "firing" during the dry weather and were less affected at the critical stage of growth, the time when silks are developing, than local varieties.

Twenty-nine different hybrids were planted and four of the popular open-pollinated varieties were used in the demonstrations for comparison. Only those hybrids were used in individual demonstrations which appeared in experimental tests to be suited to the particular soil and climatic conditions where they were to be planted.

I trust that it will not be construed that the hybrids used in these comparisons are the only good ones. Time and facilities would only permit the use of a limited number of hybrids. In some instances, seed of promising hybrids was not available. Similar demonstrations will be conducted in the future in which other hybrids will be compared with those that were superior in the 1939 demonstrations.

The results of the demonstrations conducted in Allegany and Garrett Counties were not included in the summary since two of the three demonstrations in these counties were on soils with an elevation above 2,000 feet and none of the hybrids were sufficiently early for that altitude.

The following table gives a summary of the results for the whole State, with the exception of the two counties indicated.

Table 1—*State Summary of Demonstrations.*

KIND OF CORN	Number of Demonstrations	Yield Relative to Local Corn Per cent[1]	Per Cent Lodged (Ave. 3 Locations)
Hybrid U. S. 13	12	116	23
Hybrid Funk G-135	14	109	5
Hybrid Funk G-94	14	108	3
Hybrid Funk G-527w	11	108	50
Hybrid Iowa 939	13	106	21
Hybrid Funk G-101	15	105	8
Hybrid U. S. 102	10	104	49
Hybrid Funk G-125	12	104	33
Hybrid U. S. 44	15	103	9
Golden Queen	12	100	49
Local Corn	18	100	.....
Hybrid Funk G-235	17	96	32
Johnson County White	6	92	56
Reids Yellow Dent	13	90	72
Lancaster County Sure Crop	7	89	44

[1]59.2 bushels per acre equals 100 per cent.

Only hybrids that appeared in six or more demonstrations were included in the summary.

Observation was made of the quality of corn in each demonstration, along with the recording of yields and the number of lodged or down plants. Soil samples were taken from each field and analysed.

Table 2—*Relation of Soil Fertility to Yield of Corn in Demonstrations.*

	Average Yield Per Acre Bushels	Average[1] pH Test	Average Calcium Test	Average Application of Manure (Tons)	Fertilizer Applied	
					Ave. Lbs. Per Acre	Average Analysis
Five Highest	76.6	6.2	Medium	8.0	200	2-12-6
Second Five...	60.2	5.7	Low	8.4	100	3-12-6
Five Lowest...	42.3	5.3	Trace	2.6	500	2-10-6

[1] pH is a way of expressing acidity. Soil is neutral in reaction at pH 7.0. The soil becomes more acid as the pH goes below 7.0 and becomes alkaline when it rises above the neutral point.

It is interesting to note the definite correlation between the yields and the soil reaction. Where the yields were highest, the soil was nearer neutral in reaction and the available calcium was greater.

The yields were also greater where heavier applications of barnyard manure were applied, particularly when the manure was supplemented with fertilizer high in phosphorus. Additional fertilizer did not make up for lighter applications of manure in the demonstrations having the lowest yields.

In general, the corn was sounder on the more fertile soils where the soil reaction was nearly neutral. Much moldy, soft and immature corn was observed in the plots where the soils were quite acid and fertility low.

These trials demonstrated very clearly the importance of providing a favorable soil reaction and plenty of organic matter, along with enough commercial fertilizer to balance the plant food requirement for maximum yields of sound corn.

REPORT OF THE SECRETARY-TREASURER FOR THE YEAR 1939.

The Thirty-third annual meeting of the Maryland Crop Improvement Association was attended by approximately 86 farmers and agricultural workers. The meeting was most successful and should do much to stimulate interest in crop improvement work. With increased interest in these meetings, more room must be provided for holding the meetings in the future.

The State Corn and Grain Show was held in the Lord Baltimore Hotel under the auspices of the Maryland Crop Improvement Association on January 10th and 11th. The exhibit compared very favorably with those of previous years, both in quality and number of entries. Two hundred and three exhibits were entered in the Show.

An educational exhibit showing the recommended varieties of grain in Maryland was on display.

Following are the names of the winners in the respective classes.

District I

Class 1—Reids Yellow Dent (3 exhibitors). First, Chela Farms, Phoenix; second, Charles Albright, Reisterstown; third, Granville Arbaugh, Westminster.

Class 2—Golden Queen (4 exhibitors). First, Vernon C. Wolfe, Westminster; second, A. L. Curtis, Sparks; third, Clinton Little, Westminster; fourth, Maurice Wolfe, Westminster.

Class 3—Lancaster Co. Sure Crop (1 exhibitor). First, Walter Warehime, Westminster.

Class 4—Johnson Co. White (1 exhibitor). First, Fred C. Jones, Darlington.

District II

Class 5—Reids Yellow Dent (5 exhibitors). First, Peter Ruffner, Sharpsburg; second, O. W. Burtner, Keedysville; third, Richard Holter, Jefferson; fourth, Ira C. Doub, Hagerstown; fifth, Howard Stup, Frederick.

Class 6—Golden Queen (8 exhibitors). First, John A. Holter, Jefferson; second, Edgar Hawker, Frederick; third, Maynard Hawker, Middletown; fourth, John E. Crum, Woodsboro; fifth, Phillip Reisler, Woodsboro.

Class 7—Lancaster Co. Sure Crop (4 exhibitors). First, R. W. Burtner, Sharpsburg; second, Howard W. Burtner, Keedysville; third, Ira C. Doub, Hagerstown; fourth, Jacob Burtner, Boonsboro.

Class 8—Johnson Co. White (4 exhibitors). First, Howard Stup, Frederick; second, Robert Holter, Jefferson; third, O. W. Burtner, Keedysville; fourth, Howard W. Burtner, Keedysville.

District III

Class 9—Reids Yellow Dent (2 exhibitors). First, T. B. Abell, Mitchellville; second, Presley Taylor, Gambrills.

Class 10—Other Yellow Dent (2 exhibitors). First, Presley Taylor, Gambrills; second, Madorjoes Farm, Bowie.

Class 11—White Dent (2 exhibitors). First, Joseph F. Buckler, Huntingtown; second, Calvert C. Buckler, Huntingtown.

District IV

Class 12—Golden Queen (2 exhibitors). First, Walter Hollingsworth, Chestertown; second, C. C. Phillips, Quantico.

Class 13—Yellow Dent (4 exhibitors). First, Matt Harding, Cambridge; second, Dr. J. W. Crowel, Centreville; third, Marion Leiby, Centreville; fourth, Irving Jones, Tyaskin.

Class 14—White Dent (3 exhibitors). First, Matt Harding, Cambridge; second, Walter Hollingsworth, Chestertown; third, Marion Coleman, Chestertown.

Honorary

Class 15—Reids Yellow Dent (8 exhibitors). First, C. D. Davis, Street; second, T. E. Zimmerman, Frederick; third, Maynard Hawker, Middletown; fourth, B. F. Zimmerman, Frederick; fifth, Jacob Burtner, Boonsboro; sixth, Howard W. Burtner, Keedysville; seventh, D'Arcy Harding, Cambridge.

Class 16—Golden Queen (11 exhibitors). First, Granville Arbaugh, Westminster; second, Cecil K. Holter, Jefferson; third, Katherine Arbaugh, Westminster; fourth, Noah Arbaugh, Westminster; fifth, Mildred Arbaugh, Westminster; sixth, Margurite Arbaugh, Westminster; seventh, Ivy Arbaugh, Westminster.

Class 17—Johnson County White (3 exhibitors). First, T. E. Zimmerman, Frederick; second, B. F. Zimmerman, Frederick; third, Cecil K. Holter, Jefferson.

State Wide—Ten Ear Sample

Class 18—White Cap (8 exhibitors). First, Mellor K. Ward, Jarrettsville; second, R. W. Burtner, Sharpsburg; third, Howard Stup, Frederick; fourth, John M. Crum, Walkersville; fifth, John E. Crum, Woodsboro.

Class 19—Yellow Dent (7 exhibitors). First, Cecil K. Holter, Jr., Jefferson; second, Robert Holter, Jefferson; third, Peter Ruffner, Sharpsburg; fourth, William Brendel, Ellicott City; fifth, Jacob Burtner, Boonsboro.

Class 20—White Dent (Not judged).

Class 21—Hybrid (4 exhibitors). First, Howard W. Burtner, Keedysville; second, Calvert C. Buckler, Huntingtown; third, Joseph F. Buckler, Huntingtown; fourth, Robert T. Williams, Salisbury.

State Wide—Single Ear Sample

Class 22 (22 exhibitors). First, T. E. Zimmerman, Frederick; second, Cecil K. Holter, Jefferson; third, B. F. Zimmerman, Frederick; fourth, Charles Albright, Reisterstown; fifth, Chela Farms, Phoenix.

Maryland Seed Growers' Display

Class 23 (14 exhibitors). First, B. F. Zimmerman, Frederick; second, C. D. Davis, Street; third, Granville Arbaugh, Westminster; fourth, T. E. Zimmerman, Frederick; fifth, Chela Farms, Phoenix; sixth, Edgar Hawker, Frederick; seventh, Maynard Hawker, Middletown.

Grand Champion

Class 24—C. D. Davis of Street, Maryland, was named winner of the grand champion award for the best ten-ear exhibit of corn this year in the Annual Maryland Corn Show. The award was $20.00.

4-H Club and Future Farmer Members

Class 25—Reids Yellow Dent (11 exhibitors). First, Waldon Burtner, Boonsboro; second, Edwin Burtner, Keedysville; third, Roger E. Burtner, Keedysville; fourth, George S. Burtner, Sharpsburg; fifth, Clark Crawford, Keedysville.

Class 26—Golden Queen (7 exhibitors). First, John A. Holter, Jefferson; second, Richard Holter, Jefferson; third, Cecil K. Holter, Jr., Jefferson; fourth, William Hines, Jr., Brinklow; fifth, Levering Islaub, Owings Mills.

Class 27—Johnson Co. White (6 exhibitors). First, Cecil K. Holter, Jr., Jefferson; second, Roger E. Burtner, Keedysville; third, Edwin Burtner, Keedysville; fourth, John A. Holter, Jefferson; fifth, Richard Holter, Jefferson.

Class 28—Hybrid (3 exhibitors). First, William J. Hines, Jr., Brinklow; second, Roger E. Burtner, Keedysville; third, Clark Crawford, Keedysville.

Class 29—Out of State (No exhibitors).

Grain

Class 30—Wheat (12 exhibitors). First, Harold Smith; second, Clifford Smith; third, Granville Arbaugh, Westminster; fourth, Charles Albright, Reisterstown; fifth, Noah Arbaugh, Westminster.

Class 31—Marnobarb Barley (4 exhibitors). First, Spring Cove Farm, Centreville; second, Noah Arbaugh, Westminster; third, George Tracy, Westminster; fourth, Granville Arbaugh, Westminster.

Class 32—Tennessee Winter Barley (13 exhibitors). First, Clifford Smith; second, Harold Smith; third, O. W. Burtner, Keedysville; fourth, R. W. Burtner, Sharpsburg; fifth, T. E. Zimmerman, Frederick.

Class 33—Rye (3 exhibitors). First, Granville Arbaugh, Westminster; second, Jacob Burtner, Boonsboro; third, William J. Hines, Jr., Brinklow.

Class 34—Soybeans (2 exhibitors). First, Spring Cove Farm, Centreville; second, Ryall Davis, Willords.

Class 35—Red Clover (18 exhibitors). First, O. W. Burtner, Keedysville; second, R. W. Burtner, Sharpsburg; third, William Brendel, Ellicott City; fourth, Harold Smith; fifth, Charles Albright, Reisterstown.

The exhibits were judged by C. C. Phillips of the University of Delaware and Geary Eppley and Albert Woods of the University of Maryland.

At the business meeting on Wednesday, January 10th, the following officers were elected:

President—Leonard A. Renshaw, Centreville, Md.
Vice-President—James R. Galbreath, Street, Md.
Secretary-Treasurer—John W. Magruder, College Park, Md.
Delegate to Farm Bureau—Lawrence E. Ensor, Sparks, Md.

The Secretary-Treasurer reported the following results of the questionnaire which was sent to all 1939 exhibitors on the question "Do you favor limiting exhibits next year to one entry from a farm?" There were 37 voting in favor of limiting the number of exhibits and 12 voting against limiting the exhibits.

The following resolution was offered and passed:

RESOLUTION

It is with feelings of much sadness and great loss that we record the death of Professor J. E. Metzger. He expired on December 25, 1939 at Lake Worth, Florida, where he and Mrs. Metzger had gone for a much deserved rest. At the time of his death he was Director of the Agricultural Experiment Station, and the Head of the Agronomy Department of the University of Maryland.

Although born in Pennsylvania, he had spent twenty-five fruitful years in behalf of Maryland agriculture. During most of this time he was an active member of the Maryland Crop Improvement Association. From 1917 to 1929 he served as Secretary-Treasurer of our organization. Under his guidance our annual corn and grain show acquired a reputation for quality. Moreover, his influence was a great factor in the use of improved varieties and high-quality seed on our farms.

Following his long term of office, he remained a guiding spirit in the affairs of the Association. He never became too busy to help us with our problems. His numerous contributions to our programs will long be remembered for their diversity, clarity, and understanding. To a high degree, he possessed the ability to interpret to us the findings of involved research. His broad knowledge of scientific crop production and soil improvement was tempered with a keen conception of the economic factors so important in the practical solution of most farm problems. Truly it may be said that he was a tower of strength, a guiding light in things agricultural.

Be it therefore resolved, that this expression of appreciation be sent to Mrs. Metzger, and also that it be recorded in the minutes of the Association.

(Passed by the Maryland Crop Improvement Association at the regular meeting held on January 10th, 1940.)

TREASURER'S REPORT
Maryland Crop Improvement Association
January 1, 1939 to December 31, 1939

Balance in bank—January 1, 1939		$ 119.28
Receipts		
Appropriation from Maryland State Fair Association	$700.00	
Appropriation from Maryland State Fair Association for Tobacco premiums	250.00	
Dues paid by members (1939)	5.00	
Dues taken out of awards (1939)	68.00	
Total Receipts		$1,023.00
Total		$1,142.28
Expenditures		
Maryland Farm Bureau Dues	$ 20.00	
Awards, 1939 Corn and Grain Show (Less amount reserved for dues)	419.00	
Awards 1939 Tobacco Exhibit	240.00	
Incidentals in connection with tobacco exhibit	5.38	
Ribbons, 1939 Corn and Grain Show	20.96	
Labor in connection with 1939 Show	32.00	
Postage, circulars and letters 1939 and 1940 shows	13.00	
Printing, membership cards	4.00	
Printing, 1940 Premium list	21.50	
Express charges on Premium lists	.25	
Construction of corn trays	28.00	
Pans to display grain	2.80	
Dues taken out of awards	68.00	
Refund to Fair Board for Corn and Grain Show	103.24	
Refund to Fair Board for Tobacco Exhibit	4.62	
Lumber for exhibit to be displayed at 1940 Show	2.50	
Total Expenditures	$985.25	$ 985.25
Cash in Bank (December 31, 1939)		157.03
Total		$1,142.28

Baltimore, Maryland, January, 1940.

We, the undersigned have examined the books of the Treasurer of the Maryland Crop Improvement Association and have found them to be correct.

Auditing Committee,

FRED C. JONES
J. Z. MILLER.

REPORT

OF THE

THIRTY-FIRST ANNUAL MEETING

OF THE

Maryland State Beekeepers' Association

Y. M. C. A., Hagerstown, Maryland

January 13, 1940

The 31st Annual Meeting of the Maryland State Beekeepers' Association was held in the Y. M. C. A. Auditorium, Hagerstown, Saturday afternoon and evening, January 13, 1940.

The afternoon session was called to order at 2:45 P. M. by President Harold L. Kelly, Forest Glen, who reported the illness of George J. Abrams, Secretary-Treasurer of the organization.

In the absence of Mr. Abrams, the Secretary-Treasurer's report was postponed until the next general meeting of the Association.

Mr. Kelly proceeded with the Annual Address of the President in which he called attention to the fact that 1939 will be long remembered as the year in which the Association waged a successful fight to obtain a state appropriation for setting up a necessary Apiary Inspection Service. Mr. Kelly pointed out, however, that not all the funds asked for were appropriated and that a considerable curtailment in inspection activity will be forced on the Service. He then reviewed the Association's activities for 1939, calling attention especially to the splendid field meetings held and also took occasion to praise the Association's new policy of taking the Annual Winter Meeting every other year to the counties, instead of holding all of them in Baltimore.

A. D. Hiett, Lynchburg, Virginia, an old friend of Maryland bee culture, was introduced and delivered an address entitled "Bee Culture in the Southern States."

Dr. George P. Walton of the U. S. Bureau of Chemistry and Soils, U. S. Department of Agriculture, who was scheduled to speak on the following subject, "The Use of Honey in Making Jams and Jellies and Candied Fruit," was reported absent because of illness. His paper was read by Harold J. Clay.

At this point in the program, Norris James of Baldwin (Baltimore County), the Association's second president and one of the top comb honey producers, very kindly consented to appear on the program. His impromptu discussion of his methods of management and hive manipulations for comb honey production was very enlightening.

The afternoon session adjourned at 5 P. M., at which time judging of the 3rd Annual Maryland Honey Sweepstakes started. The judges this year were Dr. C. E. Burnside, Dr. E. N. Cory, and James I. Hambleton.

At 6 P. M., a group of about 35 beekeepers repaired to the Patterson Hotel where a specially arranged "Beekeepers Dinner" was served.

The evening session convened promptly at 8 P. M. in the Y. M. C. A. Auditorium. The first address of this session was given by Mr. James I. Hambleton, Director of the U. S. Bee Culture Laboratory, Beltsville, Maryland. It was entitled "The Position of the Honey Bee in Relation to Human Welfare." Mr. Hambleton pointed out the importance of honey to man from ancient times to the present; the uses of beeswax in the various arts and industries and concluded with a discussion of the pollenizing value of honey bees in which he pointed out the indispensability of honey bees to the agricultural economy of the nation.

To allow Mr. Hambleton and Dr. Cory to make an early departure, the order of the evening session was rearranged and Dr. Cory announced the winners in the 3rd Annual Maryland Honey Sweepstakes. (A complete list of winners is included elsewhere in this report.)

Following announcement of the Sweepstakes winners, Dr. Cory, as State Entomologist, conducted the formal appointing of the new District Apiary Inspectors.

Dr. C. E. Burnside appropriately discussed the following subject "Disease Problems in Modern Bee Culture." Dr. Burnside pointed out the seriousness of American Foul Brood and indicated the losses which this and other infectious diseases can and do cause.

Following this talk, a motion was made and carried expressing the regret of the Association members that George J. Abrams was unable to attend because of illness and authorizing the sending of a suitable expression of this feeling.

The final address of the evening was made by Harold J. Clay of the Bureau of Markets, U. S. Department of Agriculture. His subject was "Why is Honey Selling at Its Present Levels?"

The election of officers was postponed, inasmuch as a number of those attending had come a long way and the hour was getting late.

The meeting adjourned at 10:30 P. M.

(Through the generosity of the Maryland Fair Board, the Annual Maryland Honey Sweepstakes was made possible again, this, the 3rd year. Class No. 1, Best Display, was competed for in the Lord Baltimore Hotel, Baltimore, at the Maryland Agricultural Society-Maryland

Farm Bureau Federation annual convention. The other five classes in the Standard Maryland Fair Honey and Wax Premium List were set up and judged at the 31st Annual Meeting reported above. In addition to the "Sweepstakes" entries, set up in the Y. M. C. A. Lobby, an interesting collection of old-time scale model bee hives accumulated originally in the U. S. Patent Office, Washington, D. C., and recently placed under the custodianship of the U. S. Bee Culture Laboratory, was placed on exhibition. The International Honey Collection in possession of the U. S. Bureau of Chemistry and Soils, scheduled for display was not exhibited because of deterioration. A display of modern bee equipment was set up by the G. B. Lewis Company, Lynchburg, Virginia, and rounded out the Lobby exhibits.)

PRIZE WINNERS
3RD ANNUAL "HONEY SWEEPSTAKES"

Class No. 1, "Best Display," set up in Lord Baltimore Hotel, Baltimore, at Farm Products Show, January 10-11-12, 1940. All other classes competed for at Y. M. C. A. in Hagerstown in conjunction with the 31st Annual Meeting of the Maryland State Beekeepers' Association, January 13.

Class	1st	2nd	3rd	4th	5th
1—Best* display	$50 L. B. Shearman Glenarm	$40 Byron Darby Hyattstown	$30 John Lindner Cumberland	$20 E. A. Andrews, Jr. Govans	$10 F. D. Covell Ijamsville
2—24 pounds light extracted	$10 John Lindner Cumberland	$8 James Mudd Brandywine	$6 N. W. James Baldwin	$4 L. B. Shearman Glenarm	$2 F. D. Covell Ijamsville
3—24 pounds dark extracted	$10 N. W. James Baldwin	$8 L. B. Shearman, Jr. Glenarm	$6 Silas Beall Clarksburg	$4 L. B. Shearman Glenarm	$2 James Mudd Brandywine
4—6 sections light comb	$10 Byron Darby Hyattstown	$8 John Lindner Cumberland	$6 N. W. James Baldwin	$4 L. B. Shearman Glenarm	$2 James Mudd Brandywine
5—6 sections dark comb	$10 Byron Darby Hyattstown	$8 N. W. James Baldwin	$6 Wayne Marshall Baldwin	$4 John Lindner Cumberland	$2 James Mudd Brandywine
6—Beeswax	$5 James Mudd Brandywine	$4 Mrs. J. E. Byers Hagerstown	$3 Mrs. A. R. Marsh Hyattsville	$2 F. D. Covell Ijamsville	$1 J. M. Marsh Hyattsville

*Honorable Mention Winners, Class No. 1
P. M. Klavuhn, Cumberland, $5
N. W. James, Baldwin, $5
L. J. Hilgartner, Phoenix, $5

ANNUAL ADDRESS OF HAROLD L. KELLY

President, Maryland State Beekeepers' Association
Forest Glen, Maryland

Fellow Beekeepers, Ladies and Gentlemen:

I welcome you to the 31st annual meeting of the Maryland State Beekeepers' Association. This time we selected Hagerstown as the place to meet for the special benefit of the Western Maryland Beekeepers with whom we desire to become more closely associated. Baltimore is a little too far for many to travel at this season of the year and in keeping with the new policy we are alternating meetings with Baltimore and the counties.

We have put our best foot forward in planning today's program. None of us were so fortunate as to go to the national meeting at Sacramento, California, last month, but for the program it has been our good fortune to obtain some of the outstanding speakers who were at Sacramento and I am sure you will go away this evening well satisfied that you attended a meeting equal to any.

At the time of last year's meeting at Baltimore, we were in the midst of our campaign for funds for American Foul Brood eradication. It gives me great pleasure to report a successful close of that campaign and tonight, as a result, you will witness the formal appointment of the inspectors who will begin their work this spring. We did not obtain all the amount estimated as necessary, so there will have to be some retrenchment in the inspection work as originally planned. However, you will see results from this appropriation and by the time the Legislature meets again we expect to be active towards having the amount increased to the original estimate in the next budget.

During the past summer we held three well-attended field meetings, one at Glenarm in Baltimore County, one near Denton on the Eastern Shore and with the Western Maryand meeting at Cumberand. I would like to mention at this time that the Eastern Shore meeting for 1940 is tentatively planned to be at Ocean City. It is hoped that many of you will plan to attend that meeting and take the opportunity to spend a pleasant week-end at the seashore. We endeavor to make each and every meeting entertaining, instructive and sociable so that it will be worth your while to attend and help spread the feeling of good fellowship which always prevails at beekeepers meetings. If we succeed in this we feel that something constructive has been accomplished.

This is all I have to offer at this time, and, as we have a rather late start in our program, we had better proceed.

ANNUAL REPORT OF EXTENSION ACTIVITIES IN BEE CULTURE FOR 1939

By GEORGE J. ABRAMS
Specialist in Apiculture
University of Maryland Extension Service

The Extension apiculture scene in Maryland, during 1939, was marked by the inauguration of two new services. Beekeepers will long remember this year as the one during which an Apiary Inspection Service was established. Funds were made available late in the year (October 1) so that only a small number of inspections were conducted before cold weather stopped the work. However, the ground work for the Service was established and everything put in readiness for the operation of a thorough-going bee disease control program to start in the early spring of 1940.

The second service established concerned orchard and truck crop pollinations. The Extension worker organized a Pollination Service to help beekeepers and fruit or truck crop growers get together for their mutual advantage. Details of both this Service and the Apiary Inspection Service are discussed elsewhere in this report.

In other respects, apiculture Extension work followed closely the educational pattern carefully designed and pursued in previous years. As has been pointed out in previous Maryland Extension Apiculture Reports, this repetition is not only unavoidable but necessary and no good reason exists to dictate a deviation from this plan. The biology of the honey bee and the fundamentals of apiary management remain the same from year to year. Because a thorough knowledge of these two factors is the rock bottom basis of all successful bee culture and because of the large number of beekeepers in the state and the large yearly additions to the ranks of neophyte beekeepers, it is apparent that a bulk of the Extension worker's time must be devoted to simple education in these perennial fundamental problems.

Education in Biology and Management

Personal Visits

The personal visit to the beekeeper's apiary is the method par excellence for teaching bee culture, be it applied to the long-established beekeeper with fixed notions of management or the season's beginner who has as yet to learn to recognize the different casts. This personal visit type of instruction, combining as it does the Aristotelian excellencies of intimate teaching and abundance of teaching material was engaged in just as far as possible. Its direct personal benefit is undebatable and it is unsurpassed for establishing county leadership. However, the limitations from a purely extension standpoint are at once obvious, as 4,000 Maryland beekeepers simply cannot be reached directly in this manner even over a period of years. Two hundred and forty-four personal visits, however, were made, many at the request of beekeepers,

others on the Extension worker's initiative in an effort to establish well-trained county leaders to whom neighboring beekeepers could turn for management consultation. It is hoped that with the assistance of these county leaders, the box hive will fast make its disappearance, a general requeening of colonies with queens of good stock will take place and that systems of management for swarm control will gradualy replace the primitive methods of colony management now pursued by over 75% of the state beekeepers.

The superiority of the personal visit type of instruction is, of course, attributed to the fact that the beekeeper learns not alone through seeing a hive manipulation accomplished, but through doing the particular piece of work immediately following the instruction and with immediate criticism of his work. This is especially of value in showing beginners the simple rudiments of hive manipulation. Reading or the lecture method alone will not suffice for grounding the beginner in this knowledge, whereas anyone can be shown in an hour's instruction period the necessary "do's" and "don'ts" of handling bees.

The personal visit method obviously has serious limitations as a teaching method. The number of beekeepers who can be visited in a season is limited because of the boundaries set by travel funds, the number which can be met with in a day and the number of days during a season which are suitable for working with bees. However, a considerable improvement can be made in furthering the scope of this personal instruction type of education by holding small out-of-door apiary classes. Toward this end "Cross Roads Schools" will be organized and given a trial in 1940, the object being to bring possibly half a dozen neighboring beekeepers together at an apiary centrally located for them for joint instruction. With careful planning, these schools should overcome the one serious fault of the personal visit, that of not reaching enough beekeepers with this type of personal instruction yearly.

Bee Culture School

Five sessions of a Beginners' School in Bee Culture were held in Cumberland (Allegany County), a region not previously reached with lectures on the biology of the honey bee and the fundamentals of apiary management.

This one school reached 65 beekeepers, none of whom had ever attended a formal series of bee culture lectures and not over 6 of whom had ever attended a beekeepers' meeting. These lectures were held each Wednesday night at 8 P. M. in the Court House, Cumberland, for five weeks. The attendance averaged 45 a lecture, starting with an initial enrollment of 36 which increased to 52 before the series ended.

This type of indoor instruction is a continuation of bee culture schools held, the three preceding years, in other counties. These schools allow of no practical demonstrations and depend entirely upon the lecture. Their value in grounding beekeepers in colony organization, division of labor and behavior of bees and the accepted fundamentals of apiary

management have been proved in previous years. Schools of this type have been requested for counties not as yet reached. The Extension worker has also been requested to hold these schools annually in several counties. While this has not been possible, the bee culture schools have been incorporated as a routine yearly part of the work. They have been truly successful enterprises.

Beekeepers Meetings

Eight beekeepers meetings were held during the year. Five of these meetings were held indoors and were featured by talks by outstanding apiculturists. The attendance totaled 427. Three of these meetings were out-of-doors affairs held during the summer at Cumberland, Glenarm, and Denton, and included besides talks by outstanding state and U. S. Department of Agriculture specialists, practical demonstrations of bee culture practices.

The demonstration feature of the Glenarm (Baltimore County) meeting was the preparing and bottling of extracted honey. Those attending were taken in small groups through a modern bottling plant. The feature of the Cumberland (Allegany County) meeting was a demonstration of how to transfer a colony of bees from a log gum into a modern hive.

One of the indoor meetings was held at Oakland (Garrett County) as a preliminary to extension and organization work planned for 1940. It was the first beekeepers' meeting to be held in far western Maryland.

Literature

As in former years, generous use was made of U. S. Department of Agriculture and Maryland bulletins pertaining to bee culture; numerous requests being made for this literature. All beginner beekeepers were supplied with copies.

A new bulletin prepared by the Department of Agricultural Economics, University of Maryland, with the Extension worker as cooperator, came from the press during the year. This bulletin which has been needed for years, gives the results of an economic survey of the beekeeping industry in Maryland. Copies were sent to all beekeepers requesting them.

In addition to the sending of printed material, the Extension worker prepared eleven monthly issues of a well-established mimeographed newsletter entitled "The Pollen Basket" to approximately 1,200 names now comprising the beekeepers mailing list. This news letter, in newspaper form, contained timely advice, notices of meetings, short articles regarding management problems and much other material of interest to beekeepers.

Bee Clinics

As in the previous year, Bee Clinics were set up for the purpose of grounding bee men in the diagnosis of American Foul Brood, a disease

of bees showing state-wide prevalence in Maryland. Nine such clinics were held and instruction was given to over 600 beekeepers.

The primary object of these clinics was to so educate beekeepers in the symptoms of American Foul Brood, that each man receiving instruction would be qualified to recognize the disease should it occur in his apiary. It is felt that much can be accomplished through accurate early diagnosis, when the disease first makes its appearance, in stopping spread of the malady.

Inspectors School

A two-day Apiary Inspectors' School was held at the University for the purpose of thoroughly training District Apiary Inspectors for their work with the Apiary Inspection Service, which was inaugurated October 1. Ten men were invited to attend this school.

Apiary Inspections

As a result of a state appropriation of $2,000 made available October 1, 1939, an Apiary Inspection Service was established employing ten District Apiary Inspectors. These men were selected for their character, county leadership qualities, and their all-round ability as beekeepers. They were given a thorough training course preparing them for the work. As funds for their employment were not available until October 1, much valuable time was lost for fall inspections. Four of the men working in counties known to harbor seriously infected areas, accomplished a total of 18 days' work. They inspected a total of 538 colonies in 44 apiaries and found 43 colonies diseased in 7 apiaries. The Extension worker responded to all requests for apiary inspections received previous to October 1 and, in addition, inspected a number of apiaries suspected of harboring disease, making in all a total of 21 apiary inspections covering 333 colonies. Of these, 5 apiaries and 26 colonies were found to be diseased. An analysis of all 1939 inspections follows:

1939 APIARY INSPECTIONS

INSPECTOR	Inspection District	COUNTY	Number of Apiaries Inspected	Number of Colonies Inspected	Number of Apiaries Diseased	Number of Colonies Diseased	Days Worked
By District Apiary Inspector:							
P. M. Klavuhn	No. 2	Allegany	7	96	1	14	2
George Kircher	No. 8	Baltimore City	12	132	3	18	6
C. W. Marshall	No. 9	Harford-Cecil	18	233	2	9	7
J. N. Marsh	No. 7	Pr. Geo.-South. Md.	7	77	1	2	3
			44	538	7	43	18
By Extension Worker (Prior to Oct. 1):							
G. J. Abrams			21	333	5	26	.....
		TOTALS	65	871	12	69	18

The results of total inspections for 1939 show that 18.46% of the apiaries inspected harbored disease, and that 7.9% of the colonies examined were infected. While the percentage of colonies diseased remains within a fraction of the 1938 figure and the percentage of apiaries diseased dropped from 31.6% in 1938 to 18.46% in 1939, little importance should be attached to these figures as actually very little state-wide work was done and much of this was conducted in suspected apiaries. However, one important fact remains and is brought out by these inspections. This fact is the further proof that American Foul Brood is not confined to any particular area but, as shown in the results of the 1939 inspections and work done in previous years, is present in widely separated regions of the state.

All colonies found to be diseased were fumigated and the hive furniture, brood and dead bees were burned and the other hive parts were rendered fit for subsequent using by charring or scrubbing. The single exception to this procedure was the College apiary consisting of 3 hives which, though diseased, was purposely maintained during the spring and summer in this infected condition so that teaching material might be obtained as required for the Bee Clinics. These colonies were subsequently destroyed.

The beekeepers in whose apiaries disease was found exhibited the finest spirit of cooperation with the inspectors. It will be this spirit of unselfish cooperation which will, in the end, play a most important role in the final elimination of American Foul Brood as a serious menace to Maryland bee culture.

It should be noted that it was during 1939 that, in addition to the appropriation of funds for establishing an Apiary Inspection Service, the Maryland Bee Disease Law was adequately amended by the Legislature and that regulations having force of law were approved and appended to the existing statute. Much thought was given to these changes and appendages so that it is believed that Maryland now has a thoroughly sane and adequate law covering bee diseases.

Pollinations

It has become increasingly apparent in recent years that the Extension worker could increase his value to orchardists and beekeepers of the state if, as intermediary between these two groups, he could widen the scope of his activities in orchard and truck crop pollinations. In previous years, work was done in a limited way with the larger fruit growers, rental colonies being located for some orchardists and those having apiaries being helped with their apiary management problems.

Because it is clear that, except under ideal conditions (where competent apiary management can be secured) the usual orchardist-owned apiary is a neglected apiary and the colonies of uncertain strength at blossom time and because the larger fruit growing areas of the state and often the properties of the fruit growers are unsuitable (due to spray poisoning of bees or lack of bee pasturage) for bee culture, and

further, because many small fruit growers have not as yet enjoyed the benefits of rental pollination colonies, the Extension worker set up in a preliminary way, a Pollination Service designed to bring fruit growers and beekeepers, both large and small, together with the Extension worker as intermediary, so that all orchardists desiring bees could obtain them and so that beekeepers wishing to enter the rental field could place their colonies.

The Pollination Service was planned so as to incorporate the following features:

(1) Early spring contact of orchardists to determine the number desiring rental colonies and the number of colonies needed for adequate orchard needs (as recommended by the Extension worker).

(2) Early spring contact of beekeepers having colonies for rent and the determining of the number of colonies of *adequate strength available* (this latter requiring colony examination by the Extension worker).

(3) By letter and visit to bring those beekeepers and fruit growers together who could be of mutual advantage, preferably bringing those within a county together so that it would not be necessary to truck colonies long distances.

(4) Encourage a Permanent Rental Plan whereby a beekeeper and orchardist having established a mutually satisfactory contact would regard their transaction as a routine yearly part of their business, thus encouraging the beekeeper to operate his colonies in such a manner that colonies of planned-for strength could be supplied and not just run-of-the-apiary colonies as are now rented too frequently.

(5) Keeping of a permanent, up-to-date file of orchadists' pollination needs and beekeepers in a position to supply them.

Considerable success was enjoyed by the Pollination Service during its first year, 1939, although much of the work was done by letter. Rental colonies totaling 684 from 9 apiaries were examined for pollination strength. These and approximately 200 other colonies not inspected for strength were placed. In addition, shipments of out-of-state rental colonies were examined.

It is believed that the pollination Service is entirely practical and useful and will become a permanent part of the Extension worker's yearly program. This work was not confined to fruit growers alone, but was extended to commercial cantaloupe growers. Preliminary arrangements were made between these growers and local beekeepers and it is believed that colonies will be rented by these men in 1940. In addition, arrangements were made to conduct result demonstrations during 1940 on cantaloupe pollinations using bee colonies and screened rows of cantaloupes.

In a further attempt to increase the scope of bee pollinations, a preliminary investigation of the commercial holly industry was made with an eye to determining the value of bees in "setting" holly berries

for the Christmas trade and the practicability of commercial holly growers renting colonies in areas showing a dearth of wild bees.

Honey Marketing and Publicity

The Permanent Maryland Fair Plan which had its inception in 1937 made good progress during 1939. This plan calls for yearly expansion until all of the larger Maryland fairs (Cumberland, Hagerstown, Frederick, Taneytown, Timonium, Bel Air, Marlboro, and Centerville) include the standard Maryland Honey and Wax Premium List and offer worthwhile cash prizes for competitive exhibits. Much importance is attached to this plan by the beekeepers and the Extension worker because of the state-wide advertising which will be secured for honey and the beekeeping industry if it materializes in its entirety. It is evident that through fair exhibitions of bee products, thousands of potential honey consumers will have honey brought to their attention.

Aside from this advertising value to the beekeeping industry, the Fair exhibition and competition combine two educational features of importance to the Extension worker. First, by bringing beekeepers together and their products into competition, a splendid opportunity is afforded for teaching better packaging methods. Each beekeeper is interested in why his product did or did not win. The reasons are supplied and also used as the basis for subsequent talks at meetings. The questions regarding packaging are not confined to those beekeepers who make fair entries, as many beekeepers attending the fair but not bringing honey entries stop at the honey exhibition, make themselves known and ask questions. This is a good source of new contacts for the Extension worker, as the honey exhibition becomes a focal point and meeting place for county beekeepers.

The second educational function of the fair exhibit, as visualized in Maryland, is education of the consuming public to the uses and virtues of honey. There has been, undoubtedly, a serious lack of consumer educational value in the fair displays of years past. An attempt was made to remedy this by telling a definite story to the consumer regarding honey. The Extension worker serviced the honey exhibitions at Cumberland, Hagerstown and Timonium, staying the entire week at the latter two fairs, and demonstrated honey and answered consumer questions with regard to bees and their products.

In all, four fairs offered the Standard Maryland Fair Honey and Wax Premium List. They were Cumberland, Hagerstown, Timonium and Marlboro.

The Cumberland fair gave the beekeepers excellently located but limited space. The Timonium Fair gave space adequate both as to size and location. The Hagerstown Fair gave new space on the first floor of the main exhibition hall and indicated that this will be allocated permanently to the industry. This is definitely a great improvement over former years.

The Marlboro Fair offered the Standard Premium List for the first time in 1939, minus Class No. 1, calling for "Best Display." This is also a step forward as this Fair has indicated that the premium inclusion will be permanent.

It is hoped that 1940 will see the premium list adopted by the Frederick, Taneytown, Bel Air and Centerville Fairs. Considerable time was spent by the Extension worker in endeavoring to interest Fair officials during 1939 but although local conditions dictated against its inclusion, the reaction was so favorable that it is almost a certainty that all eight fairs, covering nearly the whole state will in 1940, offer local beekeepers an opportunity to display their produucts.

The 2nd Annual Maryland Honey Sweepstakes was held in the Lord Baltimore Hotel in conjunction with the Farm Products Show January 11, 1939. This Sweepstakes has definitely become a part of Maryland bee culture. County Fair winners saved their prize-winning entries and entered them in state-wide competition at the Sweepstakes. The beekeeper interest and the consumer educational value of this Winter Honey Show warrants the time spent by the Extension worker in its supervision.

The Maryland Farm Products Show

At the request of the Extension Director, the Extension Specialist in Apiculture promoted and acted in the capacity of Supervisor of the Annual Farm Products Show held in January 1940. The promotion work done during December, 1939, consumed three weeks of the Extension worker's time.

OUTLINE OF DISCUSSION ON SOUTHERN BEEKEEPING

By A. D. Hiett

G. B. Lewis Company
Lynchburg, Virginia

1. Important producing regions of Southern States
   a. Shenandoah Valley from Strasburg, Virginia, to Hagerstown, Maryland. Important sources: Sweet clover and blue thistle.
   b. Piedmont Region of Virginia, North Carolina and Tennessee. Important sources: Tulip-poplar and sourwood.
   c. Coastal Region of North Carolina and South Carolina. Important sources: Tulip, gallberry, holly, gum and goldenrod.
   d. South Georgia. Important sources: Tupelo, gallberry, holly, gum and palmetto.
   e. Citrus fruit area of Florida. Important sources: Fruit bloom, gallberry and palmetto.

2. Southern Beekeepers need to produce more comb honey
   a. Comb honey, either sections or bulk, outsells extracted honey for table use.
   b. Southern honey slow to granulate, which helps to exclude northern competition on comb packed in bottles or pails.
   c. Comb honey demands better price on southern markets.

3. Southern organizations
   a. Most southern beekeeping states are well organized.
   b. Southern Conference (Southern Beekeeping States Federation) doing a great job in bringing the affiliated states closer together cooperatively.
   c. Southern Conference meets in Tampa, Florida, for 1940 and prospects for 1941 conference to be held in Virginia, in which case Maryland is most cordially invited to attend.

THE USE OF HONEY IN MAKING JAMS, JELLIES AND CANDIED FRUIT

By G. P. WALTON and H. S. PAINE

Carbohydrate Research Division

Bureau of Agricultural Chemistry and Engineering
U. S. Department of Agriculture

The paper, of which this is an abstract, is a preliminary report of exploratory laboratory work on the use of honey in preserving fruits on a commercial scale. The work is a continuation of previous efforts of the Carbohydrate Research Division to introduce or increase the use of American honeys in certain of our food industries; it is not an attempt to develop or test recipes for the home kitchen.

On the basis of the conservative estimate of 80,000 tons of honey as the average annual production in the United States, and an annual commercial pack of 55,000 tons of fruit preserves and jams, and 23,000 tons of jellies, it is brought out that if honey were to be used to supply only one-half of the sweetening requirement for only one-tenth of the total production of these commercial fruit products, a new outlet would be opened for close to 3,000 tons of honey. Add to this the equivalent of proportionate use in the finishing of candied, glaced and crystallized fruits and nuts produced, and the total would account for about 4 per cent of our average honey crop.

Honey flavors blend well with the flavors of many common fruits, and the increase in the cost of jams or jellies, when honey supplies one-half of the sugar requirement, does not appear prohibitive. Hence, the ignoring of honey by the greater part of the fruit jam and jelly industry, and by leading reference books in this field, is attributed to technological

considerations—difficulties in manufacture caused when honey is substituted for part or all of the sugar requirement.

Since average extracted honey contains about 18 per cent water, it is necessary to use about 1¼ pounds of honey for every pound of sugar replaced; and this means the addition of about 3½ ounces of contained water that will have to be reckoned with per pound of sugar replaced by honey. The jam- and jelly-making experiments reported were designed to see if this excess-water handicap could be overcome, and if fruit and honey, or fruit, sugar and honey products, could be obtained which had satisfactory consistency, color and flavor.

Trial batches of damson plum and grape jams, and of peach and grape jellies, were made with two high-grade honeys (clover and tupelo) as the sole sources of sugar, and also with granulated sugar supplying one-half the sugar requirement. While satisfactory on the score of flavor, these products did not have the consistency nor in every case the color and clarity requisite in the commercial articles. The indications are that by suitably pre-concentrating the fruit or fruit-juice base at moderate temperatures, preferably in a vacuum pan, before adding the bulk of the honey, satisfactory products may be obtainable; but further experiments will have to be conducted before this can be considered to be established.

In the preparation of candied and glaced fruits, the chief advantage of using honey is in the imparting of the honey flavor, or a desirable blend of flavors, to the finished product. Hence, the use of honey was restricted to the final or finishing sirup in the experiments reported. However, trial runs of the full candying process were carried out on peaches, damson plums, seedless grapes and pears, preliminary to the experimental finishing of these fruits with honey, or sugar and honey. Experiments were also conducted on finishing Royal Ann cherries that had been partly candied by a commercial concern. In this series of tests, a comparison based on the quality of the finished candied fruit was made between experimental final sirups consisting of honey of several concentrations, a honey and sugar sirup, and a standard sugar sirup of 74° Brix, containing equal quantities of granulated sugar and invert sugar. This work is being continued.

REPORT

OF THE

Maryland Vegetable Growers' Association

TWENTY-FIRST ANNUAL MEETING

Wednesday, January 10, 1940

Baltimore, Maryland

The twenty-first annual meeting was called to order at 10:30 A. M. by President Egbert Hawkins, Harmans, Maryland. The first order of business was the appointment of the following committees: Nominating, Resolutions, and Auditing. A list of the membership of these committees is attached.

The first paper on the program, by Dr. C. H. Mahoney, discussed progress in vegetable research at Maryland and other stations. He referred to the progress made in fertilizer placement for different crops and the results of variety trials, particularly with peas and cantaloupes.

Following Dr. Mahoney's talk, the meeting was thrown open to a general discussion of production problems, which was led by County Agent J. P. Brown of Wicomico County. The topics which received attention in this discussion were "Experiences with New Varieties", "Fertilizer Placement for Various Crops", "The Control of Insect Pests and Plant Diseases Affecting Vegetable Crops", "Labor Difficulties Which Have Been Encountered", and "The Needs for Better Grading and Packing of the Products Being Merchandised". The discussions on these topics were entered into very freely, not only by members of the Extension and Experiment Station Staffs of the University, but by growers themselves and many valuable points were brought out by the experiences and observations of those present.

The meeting adjourned for lunch at 12:30 P. M. and reconvened for the afternoon session at 1:30 P. M.

There were two general topics for discussion in the afternoon; the first of these had to do with the Baltimore Produce Market Terminal and the progress which had been made toward better facilities for marketing produce in Baltimore. This discussion was led by County

Agent Stanley E. Day of Anne Arundel County and the results of surveys and preliminary work looking toward the betterment of marketing conditions were presented by members of the Department of Agricultural Economics and the Department of Markets.

The second topic of the afternoon session was "Do We Need a Vegetable Seed Law?"—and was led by County Agent J. P. Brown of Wicomico County.

The topics discussed during the afternoon seemed of genuine interest to all present and in addition to presentation of material by members of the University staff, there were a number of questions and discussions by the audience who seemed particularly interested in all of the matters being considered.

The Resolutions Committee presented resolutions which were adopted by the Association and which were also forwarded to the Resolution Committee of the Farm Bureau Federation for presentation to that body. Copies of these resolutions are attached.

The following officers were elected for the year 1940:

President, H. J. W. Rayner, Salisbury.
Vice-President, Clay Whiteford, Whiteford.
Secretary-Treasurer, W. R. Ballard, College Park.
Director, Edgar L. Williams, Salisbury. (To fill out the unexpired term of H. J. W. Rayner).

J. Miles Lankford, Pocomoke, was re-elected for a term of three years.

Other officers re-elected were:

Director for Farm Bureau: F. Ridgely Todd, Sparrows Point.
Delegate to Farm Bureau: C. E. Hammond, Brooklyn.
Director for Agricultural Corporation: Wm. G. Lynch, Dundalk.

The Nominating Committee was: A. Morris Todd, E. L. Williams, and W. N. Eyler.

The Resolutions Committee, consisting of F. Ridgely Todd, Clay P. Whiteford, and H. J. W. Rayner, presented the following resolutions:

1. *Be it resolved,* That the Maryland Vegetable Growers' Association continue to appoint two representatives to the Northeast Vegetable and Potato Council, one from Eastern Shore and one from Western Shore, to attend these meetings alternatively.

We wish to express our appreciation to the Maryland Farm Bureau, Inc., for defraying these representatives' expenses in the past and request that they continue such for the benefit of the vegetable industry.

2. *Be it resolved,* That we request of the Research Department of the Maryland Experiment Station more adequate consideration in regard to the vegetable industry's needs as ascertained to be necessary in the various producing areas of the State.

3. *Be it resolved,* That we endorse and support the resolution of 1940 of the Maryland Farm Bureau, Inc., regarding the Baltimore Market Facilities.

4. *Be it resolved,* That the Baltimore Market Committee request and follow through with the Agriculture services of the State to coordinate in line with furnishing the needed information to both producers and the trade, in regards to crop conditions in the State and competing areas so that surpluses can be anticipated sufficiently in advance to be handled efficiently.

If special funds are needed for this work, it shall be their duty to have same included in the necessary budget and specifically earmarked.

5. *Whereas,* the maintenance of unhampered and broad markets for agricultural products is a fundamental necessity for vegetable and other growers, and

Whereas, discriminatory and punitive taxes on any type of retail distribution tends to restrict farm markets by increasing consumer costs, and

Whereas, leading National farm organizations including the Vegetable Growers' Association of America and the Northeastern Vegetable and Potato Council have protested such tax laws,

Be It Resolved, That the Maryland Vegetable Growers' Association go on record as condemning discriminatory levies on retail distributors as adverse to the farmers' best interests, and

6. *Be It Resolved,* That an expression of appreciation be extended to those who have made this program possible.

The meeting adjourned at 5:15 P. M. with the general opinion that the discussions had been well worthwhile and that the meeting had been a very successful one.

The Auditing Committee, E. P. Walls, H. A. Hunter, and C. H. Mahoney, reported that the Treasurer's books were in order and showed a balance as of December 31, 1939, of $78.48.

PRIZE WINNERS AT THE STATE POTATO AND VEGETABLE SHOW

Lord Baltimore Hotel

Baltimore, Md.—January 10 and 11, 1940.

Class I—Adult Certified Early or Medium Early Varieties

First Place—Foster Yost, Accident, Md.—Garrett County.
Second Place—Eugene Schlosnagle, Accident, Md.—Garrett County.
Third Place—Howard Schlosnagle, Accident, Md.—Garrett County.
Fourth Place—J. G. Callis, Accident, Md.—Garrett County.
Fifth Place—Lawrence Groer, Accident, Md.—Garrett County.
Sixth Place—Troy Fike, Friendsville, Md.—Garrett County.

Class II—Adult Certified Smooth Rural

First Place—Foster Yost, Accident, Md.—Garrett County.
Second Place—Howard Schlosnagle, Accident, Md.—Garrett County.
Third Place—Marvin Schlosnagle, Accident, Md.—Garrett County.
Fourth Place—Junior Schlosnagle, Accident, Md.—Garrett County.
Fifth Place—Adam Richter, Accident, Md.—Garrett County.
Sixth Place—J. G. Callis, Accident, Md.—Garrett County.

Class III—Adult Certified Russet Rural

First Place—Wilbur Thomas, Friendsville, Md.—Garrett County.
Second Place—Albert Richter, Accident, Md.—Garrett County.
Third Place—Guy Broadwater, Accident, Md.—Garrett County.
Fourth Place—Richard DeBerry, Oakland, Md.—Garrett County.
Fifth Place—Robert DeBerry, Oakland, Md.—Garrett County.
Sixth Place—James George, Grantsville, Md.—Garrett County.

Class IV—Adult Certified Dakota Red

First Place—John Jehle, Hyattsville, Md.—Prince Georges County.
Second Place—Evans Chaney, Laurel, Md.—Prince Georges County.
Third Place—George Buckingham, Marriottsville, Md.—Howard County.
Fourth Place—William Cissel Simpson, Clarksville, Md.—Howard County.

Class V—Adult Certified Any Other Variety

First Place—John Jehle, Hyattsville, Md.—Prince Georges County.
Second Place—Evans Chaney, Laurel, Md.—Prince Georges County.
Third Place—William Cissel Simpson, Clarksville, Howard County.
Fourth Place—Robert DeBerry, Oakland, Md.—Garrett County.

Class VI—Adult Certified Sweet Potatoes

First Place—Carl H. Smith, Salisbury, Md.—Wicomico County.
Second Place—Edgar L. Williams, Salisbury, Md.—Wicomico County.
Third Place—J. Willard Toadvine, Salisbury, Md.—Wicomico County.
Fourth Place—Rayner Brothers, Salisbury, Md.—Wicomico County.
Fifth Place—Robert T. Williams, Salisbury, Md.—Wicomico County.

Class VII-A—Adult Commercial Irish Cobbler

First Place—Foster Yost, Accident, Md.—Garrett County.
Second Place—Howard W. Burtner, Keedysville, Md.—Washington County.
Third Place—Matt Harding, Cambridge, Md.—Dorchester County.
Fourth Place—Leroy Burtner, Sharpsburg, Md.—Washington County.
Fifth Place—O. W. Burtner, Keedysville, Md.—Washington County.
Sixth Place—R. W. Burtner, Sharpsburg, Md.—Washington County.

Class VII-B—Adult Commercial Early and Medium Early Varieties

First Place—Marvin Schlosnagle, Accident, Md.—Garrett County.
Second Place—Richard DeBerry, Oakland, Md.—Garrett County.
Third Place—Wm. F. DeBerry, Oakland, Md.—Garrett County.
Fourth Place—Frank Callis, Accident, Md.—Garrett County.
Fifth Place—Howard W. Burtner, Keedysville, Md.—Washington County.
Sixth Place—R. W. Burtner, Sharpsburg, Md.—Washington County.

Class VIII—Adult Commercial Smooth Rural

First Place—Foster Yost, Accident, Md.—Garrett County.
Second Place—Howard Schlosnagle, Accident, Md.—Garrett County.
Third Place—William Fratz, Accident, Md.—Garrett County.
Fourth Place—Clarence Kolb, Accident, Md.—Garrett County.
Fifth Place—Frank Callis, Accident, Md.—Garrett County.
Sixth Place—A. J. Richter, Accident, Md.—Garrett County.

Class IX—Adult Commercial Russet Rural

First Place—Wilbur Thomas, Friendsville, Md.—Garrett County.
Second Place—Adam Richter, Accident, Md.—Garrett County.
Third Place—Mrs. W. A. Speicher, Accident, Md.—Garrett County.
Fourth Place—W. C. DeBerry, Oakland, Md.—Garrett County.
Fifth Place—Lawrence Harvey, Gormania, W. Va.—Garrett County.
Sixth Place—Ray George, Grantsville, Md.—Garrett County.

Class X—Adult Commercial Dakota Red

First Place—George Buckingham, Marriottsville, Md.—Howard County.
Second Place—Evans Chaney, Laurel, Md.—Prince Georges County.
Third Place—Mrs. William Cissel Simpson, Clarksville, Md.—Howard County.
Fourth Place—William Cissel Simpson, Jr., Clarksville, Md.—Howard County.
Fifth Place—Joseph Fischer, Annapolis, Md.—Anne Arundel County.
Sixth Place—Bernard Fischer, Annapolis, Md.—Anne Arundel County.

Class XI—Adult Commercial Any Other Variety

First Place—John Jehle, Hyattsville, Md.—Prince Georges County.
Second Place—Evans Chaney, Laurel, Md.—Prince Georges County.
Third Place—William Cissel Simpson, Jr., Clarksville, Md.—Howard County.
Fourth Place—Joseph Fischer, Annapolis, Md.—Anne Arundel County.
Fifth Place—Bernard Fischer, Annapolis, Md.—Anne Arundel County.
Sixth Place—Harry Van Sickle, Friendsville, Md.—Garrett County.

Class XII—Adult Commercial Sweet Potatoes, Maryland Golden Sweet

First Place—J. Willard Toadvine, Salisbury, Md.—Wicomico County.
Second Place—Edgar L. Williams, Salisbury, Md.—Wicomico County.
Third Place—Robert T. Williams, Salisbury, Md.—Wicomico County.
Fourth Place—Carl H. Smith, Salisbury, Md.—Wicomico County.
Fifth Place—Robert Lee Williams, Salisbury, Md.—Wicomico County.

Class XIII—Adult Commercial Sweet Potatoes, Any Other Variety

First Place—J. Willard Toadvine, Salisbury, Md.—Wicomico County.
Second Place—Rayner Bros., Salisbury, Md.—Wicomico County.
Third Place—Edgar L. Williams, Salisbury, Md.—Wicomico County.
Fourth Place—Carl H. Smith, Salisbury, Md.—Wicomico County.
Fifth Place—O. W. Burtner, Keedysville, Md.—Washington County.
Sixth Place—R. W. Burtner, Sharpsburg, Md.—Washington County.

Class XIV—4-H Club Certified and Commercial Early Varieties

First Place—John Jehle, Hyattsville, Md.—Prince Georges County.
Second Place—Edwin Burtner, Keedysville, Md.—Washington County.
Third Place—Roger E. Burtner, Keedysville, Md.—Washington County.
Fourth Place—Clark Crawford, Keedysville, Md.—Washington County.
Fifth Place—A D. Jennings, Beltsville, Md.—Montgomery County.

Class XV—4-H Club Certified and Commercial Medium Late Varieties

First Place—Marvin Schlosnagle, Accident, Md.—Garrett County.
Second Place—Roger E. Burtner, Keedysville, Md.—Washington County.
Third Place—Junior Schlosnagle, Accident, Md.—Garrett County.
Fourth Place—Robert Miller, Accident, Md.—Garrett County.
Fifth Place—Clark Crawford, Keedysville, Md.—Washington County.
Sixth Place—Edwin Burtner, Keedysville, Md.—Washington County.

Class XVI—4-H Club Certified and Commercial Late Varieties

First Place—Paul Miller, Accident, Md —Garrett County.
Second Place—Albert Richter, Accident, Md.—Garrett County.
Third Place—Gurney Kolb, Accident, Md.—Garrett County.
Fourth Place—Eugene Schlosnagle, Accident, Md.—Garrett County.
Fifth Place—Clark Kolb, Accident, Md.—Garrett County.
Sixth Place—Edwin Burtner, Keedysville, Md.—Washington County.

Class XVII—F. F A. Certified and Commercial Early Varieties

First Place—William Hines, Sandy Spring, Md.—Montgomery County.
Second Place—Douglas Haynes, Keedysville, Md.—Washington County.
Third Place—Billy Gannon, Cordova, Md.—Talbot County.

Class XVIII—F. F. A. Certified and Commercial Rurals

First Place—Robert Miller, Accident, Md.—Garrett County.
Second Place—Willis Silber, Accident, Md.—Garrett County.
Third Place—Glen Fratz, Accident, Md.—Garrett County.
Fourth Place—Clark Kolb, Accident, Md.—Garrett County.
Fifth Place—Raymond McRobie, Oakland, Md.—Garrett County.
Sixth Place—John Brobst, Accident, Md.—Garrett County.

Class XIX—F. F. A. Certified and Commercial Late Varieties

First Place—Clifton Link., Jr., Sandy Spring, Md.—Montgomery County.
Second Place—Francis Jones, Crownsville, Md.—Anne Arundel County.
Third Place—Wilbur Adams, Federalsburg, Md.—Caroline County.

VEGETABLE CLASSES

Class I—Cabbage

First Place—William Cissel Simpson, Clarksville, Md.—Howard County.

Second Place—Mrs. Wm. Cissel Simpson, Clarksville, Md.—Howard County.

Class IV—Onions

First Place—O. W. Burtner, Keedysville, Md.—Washington County.
Second Place—Leroy Burtner, Sharpsburg, Md.—Washington County.
Third Place—R. W. Burtner, Sharpsburg, Md.—Washington County.

Class VIII—Carrots

First Place—Jacob Burtner, Boonsboro, Md.—Washington County.
Second Place—Elmer Koppelman, Raspeburg, Md.—Baltimore County.
Third Place—Clark Crawford, Keedysville, Md.—Washington County.
Fourth Place—R. W. Burtner, Sharpsburg, Md.—Washington County.
Fifth Place—O. W. Burtner, Keedysville, Md.—Washington County.

Class X—Parsnips

First Place—Elmer Koppelman, Raspeburg, Md.—Baltimore County.

Class XI—Turnips

First Place—Howard W. Burtner, Keedysville, Md.—Washington County.
Second Place—Clark Crawford, Keedysville, Md.—Washington County.
Third Place—R. W. Burtner, Sharpsburg, Md.—Washington County.
Fourth Place—Elmer Koppelman, Raspeburg, Md.—Baltimore County.
Fifth Place—O. W. Burtner, Keedysville, Md.—Washington County.

Class XIII—Squash

First Place—Howard W. Burtner, Keedysville, Md.—Washington County.
Second Place—R. W. Burtner, Sharpsburg, Md.—Washington County.

Class XV—Mushrooms

First Place—Henry Clay Whiteford, Whiteford, Md.—Harford County.
Second Place—Clay P. Whiteford, Whiteford, Md.—Harford County.

TOTAL NUMBER OF EXHIBITS

White Potatoes	116
Vegetables	21
Sweet Potatoes	18
Total	155

REPORT

OF THE

Maryland Stockmen's Association

ELEVENTH ANNUAL MEETING

January 10, 1940

Baltimore, Maryland

Mr. George K. Bailey, President, opened the Eleventh Annual Meeting of the Maryland Stockmen's Association in the Lord Baltimore Hotel, Baltimore, Maryland.

PRESIDENT'S ADDRESS

GEORGE K. BAILEY

Ladies and gentlemen, members of the Maryland Stockmen's Association: Each year the report of the annual meeting of our association starts with a section somewhat formally entitled "The President's Address." In this address, as I understand it, the president should generalize a bit about the livestock year, should mention some of the particular highlights of the year, and then perhaps say a few words about his own thoughts as to the most important problems facing Maryland livestock men.

In general, our livestock situation is continuing to show steady improvement, at least in the spread of quality in our herds and flocks, if not always in the price received for it. Our State Fair, the Baltimore Livestock Show, the new Eastern Shore Show, and the other older fairs, are being supplied with finer and larger exhibits each year in nearly every section, and many of the best of these exhibits are being bred in the State. The draft horse men and the beef cattle men are showing the greatest progress, while the sick man in our home is probably the lamb production business, mainly due to the dog menace, and next to the stomach worm, but we will have a report on this subject later on. More Marylanders are successfully exhibiting livestock out-of-state than ever before, and have, during the past year, won many good ribbons, including at least one purple and several blues, at the Virginia State Fair, the Eastern States Exposition, the Chicago International, and other large shows.

Our own Association has the largest membership in its history, and rose from less than 100 last year to 160 odd in 1939. Inasmuch as practically every Maryland farmer is, in some sense, a livestock man, if only in the possession of a team or a couple of hogs, there is no

reason why this membership should not increase manyfold—and it must if we are to make ourselves felt to any degree.

As a Maryland stockman, with beef cattle, sheep—and a family—I feel that my outfit can maintain itself; I am not afraid of the future, but we live in confusing times, and there is no question but that the future is troublesome. I think we have things alive in us that may one day make us afraid. With moderate taxation, a free hand on our own farms, and instruction without bribery, we could laugh at all forecasters of disaster, but we do not quite have these things. As President of this Association and of the State Aberdeen-Angus Breeders' Association, I have a number of times asked, almost begged Dr. Byrd at the University of Maryland to get us a full-time livestock extension man. We have one excellent man, but only one, for all horses, beef cattle, hogs, sheep and wool in all of this great State—but I am shooting at the wrong mark. The first year of the Federal Soil Conservation Program I signed my name to a piece of paper and without otherwise rolling a thumb, I received a check for some $456.00, which I kept wonderingly—but I have never taken another such check; I was afraid to, and still am. These soil conservation checks, given in so many cases to people who make no change of plan and who could very well get along without them, are but one manifestation of a soft listlessness now felt throughout the country—a sort of negation of self effort that is the very opposite of what we think of as the American spirit. My check alone would have gone far toward getting us that other extension man and the checks of my neighbors in only a few districts of the county would have given every county seat in the State an expert lecturer on agricultural subjects instead of a federal agent. The rest of that cut and many others could go toward a reduction in taxation and in debt, those swollen parasites that we lug about with us wherever we go and whatever we do.

To me, it seems that the most important thing for the Maryland stockman in 1940 will be to hold hard to his sanity, to try to recall what his people told him were the old truths. Man stands alone upon the land, and the land owes him nothing. His only possible chance of maintaining himself in happiness in his apparent isolation and weakness is through his own development of his own free spirit, thought, speech and action. All about us we see our old way of looking at these things threatened. It is something to think hard about.

In closing, I hope that all of you who have not read Sam Guard's editorial, "Roundup," in the Breeders' Gazette for January, will please do so. It is too simple to be anything but ridiculous these days, but it is very much to the point.

Before we introduce our first speaker for the morning session, I wish to appoint the following nominating committee for consideration of officers for the next year: W. R. Harvey, Chairman; Osborne Stabler, and William J. Hines. While the nominating committee is considering the officers, I think it would be well to have the report of our Secretary-Treasurer, Mr. Joseph M. Vial.

REPORT OF SECRETARY-TREASURER

JOSEPH M. VIAL

We have in the treasury, as of this date, a balance of $116.87. The News Letters have been issued as heretofore, and I wish to take this opportunity to thank all associated with the organization for their whole-hearted support in sending in timely items. Without such support our News Letters would not have been what they were. We hope to have this continued support during 1940.

Several tours were held during the past year, the first one being on Friday, February 10, when we visited the 4-H Club members feeding western lambs. This tour afforded us an opportunity to discuss with these boys and their dads just what the possibilities were in this direction. I might add that these lambs were shown and sold at the Union Stock Yards on Tuesday, February 21. On March 27 about 50 Aberdeen-Angus breeders attended a spring tour, visiting some of the Aberdeen-Angus herds in central and northern Maryland; on May 12 the Carroll County Livestock Tour took place, and in June the Livestock Feeding and Home-Grown Feed Production Tours were held.

Our membership has increased over last year and I think much of the credit should go to the Membership Committee appointed last year; Messrs. Sherman, Rucker, Outhouse, and Rench. The total membership in the Association for the year 1939 is 165, and we still hope to increase this number another year.

MR. BAILEY: You have heard the Secretary's report. What is your pleasure?

It was moved, seconded, and unanimously carried that the report, as read, be accepted.

MR. BAILEY: Our first speaker on the program this morning is Mr. Fred C. Ernst of Clearspring, Maryland, who will give us a report on the hog situation in the State.

THE HOG SITUATION IN THE STATE

FRED C. ERNST

Maryland does not produce the amount of pork she consumes. Thus, it would seem there is room for expansion of hog production here. As the hog can convert a given amount of concentrates into a greater amount of human food than any other domestic animal it would seem that expansion is the thing. However, I do not advocate wholesale expansion in production; what I do advocate is more economical production of present volume. This can be accomplished through better management and the use of superior breeding stock.

There is no better time than now to cull out undesirables and replace with good breeding animals. As the price of pork is low, likewise the price of superior breeding animals is comparatively low. Sell off a couple of your common breeders and invest in one good type, well-bred individual. By all means, use a sire of determined merit.

So many of us are unwilling to pay a few extra dollars for a good type purebred boar. We would rather go out and pick up a non-descript culprit for one or two dollars less, thinking we are saving that much. Of course, we can get as many pigs from a scrub boar as from a good sire. From my observation and understanding, this is true, but I have also seen this kind of pig take twice as long to reach market weight.

We need some concrete facts to present to prospective buyers of breeding stock, something like production records, marketing and dressing qualities.

I believe the hog is given about as little encouragement as any other animal on the farm. I have often heard it said that the hog is the dirtiest animal there is; try giving it as good conditions as your other animals and note the results.

I recently heard a man say that he has a lot of hogs. I know they are running out in the fields at all times, with a fodder stack in one field for shelter and the sky in the other fields. The owner hauls corn out and throws it on the ground. It doesn't get to the ground now because of a pretty good layer of snow. Do you think this practice is giving the hog an even break? With this sort of treatment we can readily see why it is hard to get an extra dollar for a well-bred boar or sow.

Our salvation as livestock producers lies in greater efficiency in production rather than in greater quantity in production. The European Wars will, no doubt, cause some change in the hog situation if they extend over a long period of time. However, I don't believe we should let our minds wander back to the World War conditions and be guided thusly. Although the present wars will add strength to hog values, I can see no reason for skyrocketing prices. I believe the increased domestic consumer demand will add more strength to prices than the European situation.

Base your swine production on individual conditions and hold it there, regardless of outlook. So often the future is difficult to predict. In other words, if your farming operations can handle 100 head of hogs one year it should be able to take care of that many each year. You will find that, with reasonable care and management, the hog will respond very favorably, from a financial standpoint, in any year.

The swine population has decreased since 1914, whereas cattle and sheep numbers have increased. Likewise the cattle and sheep market prices have advanced and the hog market has decreased. Corn, the basic feed for all livestock, has remained about the same. According to supply and demand, this does not seem to cohere. The hog has been shuffled out of its place as a food meat producer. This is due, to some extent, to a misinformed public. High pressure advertising by manufacturers of substitutes for lard have been detrimental to hog production.

There are some organizations throughout the country that have been attempting to correct this misunderstanding. Anything we can do to help in this direction will benefit all pork producers.

In review, let us outline a few guiding principles:

Let Maryland hog producers stick to a uniform schedule of production.

Obtain better breeding stock and use the best of care and management principles.

Give the hog a chance; he is our friend.

Advertise better breeding stock by its merits.

Do not over-estimate the effect of the European Wars on hog prices.

Try to retain the just position for pork in the menu.

If this program is followed, the hog situation in Maryland will be improved.

MR. BAILEY: Our next speaker this morning is Mr. Robert Garland, Talisman Farms, Grasonville, Maryland. Mr. Garland will address us on the care and feeding of hogs.

CARE AND FEEDING OF HOGS

ROBERT GARLAND

I am pleased to have this opportunity to say a few words about a class of live stock that I think has a place on every farm. Making money with hogs is more than luck. It is the result of planning, which includes good breeding, feeding, management and careful sanitation. Success depends considerably upon the kind of breeding stock you select. All the good feeding and management in the world means little if you have poor stock. The foundation of good breeding is good type, quality and prolificacy. It pays to have good blood. For myself, as a raiser of market hogs, I like a crossbred. They are strong, vigorous, and fast growing pigs, and when a farmer can get large litters of strong, healthy pigs he has made a good step toward profitable hog production. Extensive experiments conducted at Purdue University show that pigs which weigh less than two pounds at birth are poor profit risks and are under average weight at weaning.

A definite breeding program should be followed and it is essential to keep a breeding record in order to know when pigs are to be farrowed and also as an aid in selecting replacements. You should plan to farrow two litters a year from each sow; one in the spring and one in the fall. Usually there is little or no excuse for a sow to work for her owner only half of the time.

Now for the care of the herd boar. Many times the boar is the most neglected and abused animal on the farm. If the old saying is true that, "the boar is more than half of the herd," then he should at least be given the feed and care he deserves. Although well fed, the boar may be confined to such small quarters that his efficiency is reduced because of over-condition and a lack of exercise. A half-acre lot, with a small colony house at one end and a feeding trough at the other, makes ideal quarters for a boar. A plan of this type forces the boar to take exercise

and to get out in the sunshine. The boar should not be fattenel, but should be kept in good, thrifty condition. The condition of the boar should be the feeder's guide as to the amount to feed. Boars under eight months of age should not be used for breeding purposes. Boars eight to nine months may be expected to give ten to fifteen services in a season, but preferably should not breed more than one sow a day. It is better to bring the boar to the sow or vice versa than to allow the boar to run with the sows all the time. One good service is as good as a half dozen. This method conserves the energy of the boar, and in large herds, facilitates record keeping.

The winter management of the herd is important. The sow that is closely confined in a hog house during the winter months is not able to give as good an acocunt of herself at farrowing time as is the one that has been forced to take plenty of exercise. The sow that is exercised is not so apt to become too fat, will farrow more easily, and will recover more quickly after farrowing than the confined one. In addition to this, she ordinarily will produce a more vigorous litter of pigs.

It pays, especially when a number of bred sows or gilts are kept on a farm, to sort them into lots according to their requirements, condition, and disposition. When this is done, each sow has a better chance of getting the feed she needs.

Dry, clean, well-bedded, and well-ventilated quarters are ideal for the breeding herd. A well-bedded colony house with a door opening to the southeast, or at least to the direction from which the prevailing winds do not come, is satisfactory. The feed trough should be about 75 to 100 yards from the sleeping quarters. This arrangement forces the sows to take the needed exercise.

The next important step is feeding pregnant sows and gilts. Mature pregnant sows use their feed to maintain their bodies and also to supply material to the growing embryo. In addition to these needs, the bred gilt must have feed for her own body growth. Bred sows and gilts should be fed so that they will make the greater part of their gain in weight during the last six or eight weeks of the gestation period. When they are fed in this manner, they will be encouraged to take plenty of exercise and will be less apt to become too fat. A rule for feeding sows and gilts may be suggested, but this rule should not be followed blindly. The condition of the sow should be the feeder's guide. Ordinarily, a thin sow will need one pound of feed daily and a bred gilt from one and one-sixteenth to one and seven-tenths pounds of feed daily for each 100 pounds of body weight. An over-fat sow or boar may look well, but will be a disappointment as a breeder.

In summer, the feeding and management of the breeding herd is more simple and less expensive than in winter. Sows need little shelter. Shade, either natural or artificial, should be provided. The sows should have access to fresh, clean water at all times.

Good pastures are the foundation of profitable pork production. Sows that have access to good alfalfa or rape pasture need very little or

no grain the first half of the gestation period and then only about one-half as much per head daily as they would need in winter. The importance of good pasture cannot be over-emphasized.

At this point, I would like to emphasize the importance of sanitation. The time to start is before young pigs are born. Some pigs are runts because their parents are small and inferior breeding stock; others because they have been improperly fed, but more because they are heavily infested with internal parasites. There is money in feeding hogs, but none in feeding worms and other parasites. Even if you have good hogs and good feed your profits are gone when parasites come in. Keep them out easily and economically with a little care and attention to your stock and their living quarters. Here are some suggestions for a hog sanitation program:

1. Clean and disinfect farrowing pen and equipment.
2. Use clean, dry straw for bedding.
3. Wash sow with special care to see that the udder is free from dirt.
4. Haul pigs and sows to clean pasture.
5. Vaccinate pigs for hog cholera at five to six weeks; it saves money; the pigs are still on sow and are easier to handle.
6. Worm pigs at ten weeks.

When everything has been thoroughly cleaned, move the sow into farrowing quarters five days before she is due. My farrowing pens are colony houses. I like 8′ x 8′ box type houses on runners, with guard rails placed around the walls about 8 to 10 inches from the floor. These guard rails save many pigs. The pen should be bedded lightly with straw that has been cut in short lengths. After placing the sow in farrowing quarters, reduce her feed to about two-thirds the normal amount. At this time it is wise not to feed a ration containing too high a percentage of corn. As much as one-third of the sow's ration may be made up of wheat bran to keep her bowels moving regularly. The amount of feed should be further reduced before she farrows. I like to be with my sows at farrowing time. Many a pig can be saved then, especially in cold weather. I also like to remove pigs as fast as they are born and put them in a warm place and treat their navels with iodine, cut their needle teeth, and notch their ears. After the sow has finished farrowing, I put the pigs back and, if there are any weak ones, I help them to nurse. Patience is a great asset at this time.

Next in line is the nursing period. The sows should be started on feed gradually; twelve to fourteen hours after farrowing. Do not increase feed too rapidly, but take at least ten days to get sows on full feed. From this time on, liberal feeding is essential to maximum growth of the litter. Nothing counts more for early growth and development of young pigs than plenty of sow's milk. After fifteen days I like to put my sows and pigs on a self-feeder. By this method

both the sows and pigs get all they need to eat, and it pays to give pigs a good start. It is best to wean pigs when they are eight weeks of age. When the pigs are allowed to nurse the sow until they are eight weeks old, they usually are so accustomed to eating grain that they are not set back at weaning time. The attention the sow receives at weaning time often may determine her future usefulness. The best method is to reduce the sow's feed several days before weaning. This will reduce the milk flow and pigs will eat more grain. The sow's udder must be watched as it might have to be milked out by the pigs. After the milk flow has ceased, feed may be increased. The sow usually comes in heat a few days after weaning. It is necessary that the sow be bred at this time in order to obtain two litters a year. All pigs should be given plenty of feed and good care after weaning. When clean pasture is available pigs should be put on it and fed a well-balanced ration in a self-feeder.

Now for something to feed the sows and pigs. Swine suffer more frequently from inadequate rations than do other classes of live stock. This is probably due to the fact that most swine, unlike other farm animals, are fed rations that consist largely of grains and they eat relatively little roughage. However, the feed requirement of swine is quite simple and it is not necessary to feed complicated or expensive rations in order to obtain the best results. Due to the fact that they are fed chiefly on grain, particular care is necessary to provide in the rations sufficient amounts of protein of the right kind and quality. A good method of securing this protein is by using protein supplements of vegetable origin, such as linseed, cottonseed, or soybean oil meal, in addition to a protein-rich supplement, such as skimmilk, tankage, and fishmeal. The vitamin requirement is met adequately when hogs are on pasture, but under other conditions they may suffer seriously from deficiencies of Vitamin A and D unless well-cured legume hay or some other vitamin supplement is fed. Although the ration seems adequate in every respect, I like to add a simple mineral mixture of sixteen pounds of steam bone meal, sixteen pounds of ground limestone, and eight pounds of salt to the ton.

In my feeding at Talisman Farm I use the following ration:

For Pigs on Dry Lot:

Shelled corn, ground corn, or hominy
50 lbs. tankage or fishmeal
25 lbs. linseed
25 lbs. ground alfalfa

For Brood Sows, Gilts, and Boars in Breeding Herd:

82 lbs. ground corn
4 lbs. tankage or fishmeal
4 lbs. soybean oil meal
10 lbs. chopped alfalfa hay

For Pigs on Pasture:

Shelled corn, ground corn, or hominy
50 lbs. tankage or fishmeal
50 lbs. linseed

For Brood Sows, Gilts, and Boars in Breeding Herd on Pasture:

94 lbs. ground corn
6 lbs. tankage or fishmeal

Other rations may be found in Morrison's "Feeds and Feeding."

As a goal for all hog producers—they should produce a type of pig that will be demanded by feeders, breeders, and butchers. They should raise eight pigs per sow, averaging 40 pounds at eight weeks, and produce 200-pound hogs at six months. The raising of hogs does not require any superior skill or intelligence, but successful hog production does demand attention to a number of details.

MR. BAILEY: Before we proceed with the morning program, I should like to have the report of the nominating committee. Chairman Harvey gave the following report:

President: Edward N. Derr, Walkersville.
Vice-President: J. Maguire Mattingly, Pearson.
Sec'y-Treas.: James B. Outhouse, College Park.
Ass't. Sec'y-Treas.: Rubye M. Bresnahan, College Park.
Executive Committee: W. Alan McGregor, Worton.
B. S. Oles, Kingsville.
James Clark, Ellicott City.
Sterling Little, Westminster.
B. A. Rucker, Jr., Mechanicsville.

Delegate to Annual Meeting of Maryland Agricultural Society: Wm. J. Hines, Brinklow.

Director to Farm Bureau Federation: J. Herbert Snyder, Union Bridge.

Director to Annual Meeting: John E. Muncaster, Derwood.

Motion was made, seconded, and unanimously carried that above officers be elected for the year 1940.

MR. BAILEY: Mr. B. A. Rucker, Manager of Cremona Farms, Mechanicsville, Maryland, will now give us a report on the sheep situation in the State.

THE SHEEP SITUATION IN THE STATE

B. A. RUCKER

From the standpoint of inventory value and of annual production, the sheep industry in Maryland is of less importance than the other major livestock enterprises of the State, although this industry does make an important contribution to the success of agriculture as a whole. Under Maryland conditions, those who have the feed, equip-

ment (which amounts to very little in way of expense), and the ability to raise sheep as one of their farm operations, usually will find them a valuable contributor to farm income.

There are two areas of relatively heavy production of sheep in Maryland; one comprises Kent, Queen Anne's and Talbot Counties on the Eastern Shore, the other Garrett and Washington Counties in Western Maryland. These two sections have about 60 per cent of the total sheep in Maryland. From the standpoint of market, climate, land, and feed, Maryland can produce twice as many sheep as it does. Of the total number of sheep now being produced in Maryland not more than 10 per cent are purebreds. It would seem that there is a place for more purebred flocks in the State to produce good rams for the production of top commercial lambs from the grade flocks.

Even with the number of flocks of sheep we do have in the State it seems that more attention could be paid to the care and handling of the flocks with slightly little more cost to the owner. Such things as feeding the ram a little extra grain a month or so before the breeding season and also flushing the ewe flock, which is merely having them gaining weight when the ram is turned with the flock. Most of the commercial flock owners let the ram run with the flock the year round, which means that the ewes get bred any season of the year thereby making a group of lambs that are anything but uniform. Also, very few breeders take any steps to prevent the ewe lambs from getting bred. Just the one practice of flushing the ewes before breeding season may increase the lamb crop by 30 per cent. Well-fed ewes in medium flush seldom fail to give enough milk to support their lambs. All of these small things tend to make a successful business out of a sheep project.

Situated as Maryland is, with access to several good markets, why aren't there more sheep raised? This question has been asked me and I have heard it asked others many times. The reason for this is, I believe, due to the sheep killing dog. Sheep breeders, not only in Maryland, but in other states, are agreed that one of the greatest causes for discouragement has been the sheep killing dog. Thousands of sheep are killed yearly by dogs, causing a large monetary loss to sheep owners. Yet the greatest setback of all, which dogs cause the farm sheep industry as a whole, consists in keeping out of the business men who otherwise are inclined to go into it. No farmer, although desiring to raise sheep, is likely to attempt it while his neighbor's flocks are being chased to death.

Sheep killing dogs work both singly and in groups and may travel for miles in all directions usually working at night making it hard to catch them in the act. Some dogs simply kill two or three, while others continue to destroy the whole flock. In some cases sheep die from exhaustion after being chased. After a dog has once killed sheep it becomes a mania and he is seldom, if ever, broken of the habit. There are some precautions that can be taken such as building dog-proof fences. This is, of course, an expensive method.

I believe that the one and only effective means of insuring a profit from sheep raising is to make and enforce laws against the sheep-killing dogs. In Maryland the State Law is not operative in certain counties. In such counties other laws on this subject which have only local application in the regulation of sheep-killing dogs have been provided by the State Legislature. The dog laws of local application are variable with the different counties, but generally provide for a license tax and for reimbursement to the livestock owner for losses suffered from dogs.

The Maryland Law provides that before July 1 of each year the owner of any dog six months old or over must obtain a dog license from the county treasurer and that official must furnish the owner with a license tag to be worn on the dog at all times. A fee is charged for this license and these funds are used to reimburse the owner.

A livestock owner suffering losses by dogs may make complaint to the local justice of the peace, who appoints three disinterested persons to appraise the damages. The damage approved is paid out of the county dog tax fund. Any person may kill a dog found worrying or killing livestock or poultry. An unlicensed dog found worrying livestock or trespassing on any person's premises may be killed. It is the duty of the sheriff of the county to enforce the provisions of the law.

Not having the local laws enforced by our county officials is largely the cause of so many sheep being killed by dogs. By this I mean that there are too many unlicensed dogs running loose over the country. Then, too, I think the livestock owner is not doing his duty by failing to report any unlicensed dogs or taking some steps to see that they are removed from the community. I don't believe that any livestock owner should be reimbursed for damages done by dogs if at the time he himself is the owner of an unlicensed dog. Another suggestion would be that the owner of any dog must keep such dog, at all times, between the hours of sunset and sunrise of each day, confined on his premises. Unless the owners of dogs and livestock are going to cooperate with the county officials all dog laws are useless.

Several years ago one of the members of the State Livestock Committee had occasion to write various sheep breeders and county agents over the State asking their opinion on the sheep business in their community and the reaction to the State and local dog laws. About 50 per cent of the replies stated that the sheep industry had dropped far below normal in their community and they believed the cause to be due to the damage done by stray dogs. Some were of the opinion that it was more important that the passage and enforcement of dog laws that would keep stray dogs out of the farm flocks and herds than making a law to reimburse the owner for damages done. Some of the replies stated that they believed dogs were second to internal parasites in causing the decline in the sheep industry in their community. This may be true. Internal parasites have done a great deal of damage to sheep owners in this section of the country, but the parasites can be controlled by an educational program for treating sheep.

From some of the counties replies stated that the Humane Society of the county had done and is still doing a great deal to lower sheep losses by dogs. They had been collecting all stray dogs and due to this collection of dogs the indemnities paid to owners for losses sustained had dropped off as much as 35 per cent in their county.

Practically all of the men who replied to the letter stated that they were in favor of the State-wide law for the enforcement of dog laws. Some of the counties reported that no effort was being made to enforce the local laws and naturally they were without funds to pay dog damages, which also helped to keep sheep production down in their counties.

I am of the opinion that a State-wide law would be the proper way to handle the dog laws, provided the officials of each county, with the cooperation of the livestock owners, see that these laws are enforced. Also, I believe that owners could use a better type of fencing and take just a little more care in the handling of their livestock.

MR. BAILEY: Thank you very much, Mr. Rucker. Our next speaker on the program is Mr. James B. Outhouse, newly elected Secretary-Treasurer of our Association, who will speak on the 4-H Club sheep projects in the State.

4-H SHEEP CLUB PROJECTS

JAMES B. OUTHOUSE

In order to stimulate interest in sheep raising in the State, the Extension Service, together with cooperating organizations, is sponsoring three distinct types of 4-H Club sheep projects.

The first of these, that of feeding out a pen of native lambs for the Baltimore Livestock Show, has been carried on for a number of years. The lambs are usually of Hampshire or Southdown breeding and are fed during the summer months on home-grown grains. They are usually started at a weight of about 40 pounds and reach the market at about 80 to 85 pounds. The Baltimore Livestock Show provides classes in which these lambs may be shown for prizes and later sold for slaughter. This project has served to interest club members in a small way in the sheep industry and has given them some experience in the care and handling of sheep.

The second project is of a more recent nature. Inaugurated last year as a new project, the Western Feeder Lamb Project has proven to be popular with a number of club members. I can best tell you of this project by giving a brief report of last year's results.

On November 2, 1938, twenty boys took home 312 head of white-faced western lambs to place on feed. These lambs averaged 64 pounds each at Cody, Nebraska, and cost the boys $7.00 per hundredweight at that point. Freight, yardage, and other charges made the lambs cost $8.24

delivered at the Baltimore Union Stock Yards. The average cost per lamb was $5.30. In most cases the lambs were started slowly on alfalfa hay and a mixture of corn, oats and bran. The oats and bran were gradually decreased until a ration of shelled corn and alfalfa hay was fed. A few of the boys added a little protein supplement toward the end of the feeding period. The lambs consumed between 135 and 140 pounds of grain each and about 163 pounds of hay during the feeding period of 111 days. Most of this was home-grown feed. With corn at 50c per bushel and hay at $11.80 per ton, and protein at cost, the average feed cost was $2.23 per lamb. Seven of the 312 lambs died during the feeding period with a death loss of 2.25 per cent. The lambs made an average daily gain of .21 pound per head, which will be increased as the boys get more experience in feeding in future years. The lambs increased their weight an average of 23.4 pounds each and weighed an average of 87.6 pounds when sold. The feed cost per 100 pounds gain averaged $9.63 for the group.

On February 21, the lambs were brought back to the Baltimore Yards for a Show and Sale. The average of the auction sale was $10.53 per hundredweight for the 305 lambs sold, which returned the boys $9.23 per lamb. Thus, we can see that on the lamb basis, the lambs cost the boys an average of $5.30 each and feed costs were $2.23, making a total of $7.53. The lambs sold for an average of $9.23 each which leaves a return of $1.70 per lamb above feed costs and purchase price. This, of course, does not consider labor or interest charges, but neither does it give the lambs credit for the manure produced, which is valuable to any farmer raising cash or feed crops. Charges on buildings used would be very little, as the lambs can be fed in any kind of building that protects them from the wind and rain. Equipment need not be elaborate and these charges are likewise very slight.

The price received for these lambs was slightly higher than it would ordinarily be if the lambs were sold on the open market and the cost of the lambs was somewhat lower than it will be every year. This makes a return per lamb higher than the ordinary farmer can expect each year. The lamb feeder who can average one dollar per lamb profit above feed costs, over a period of years, is usually well satisfied.

This year a second group of feeder lambs is being fed. Six hundred and thirty-one white-faced western lambs were put on feed in Maryland and Virginia. Most of the lambs are being fed by 4-H Club members; however, a few farmers are trying out the project this year.

The lambs cost the boys a little more per hundredweight this year than last and the margin above feed costs will necessarily be lower this year than last, but with proper feeding and management these lambs should prove profitable to the boys again this year.

We believe that with the proximity to good markets and the abundance of low priced feed, Maryland affords an excellent opportunity for the feeding of western lambs. Western lambs, rather than native

lambs, should be fed for a number of reasons, the most important of which is freedom from internal parasites. Western lambs are usually more uniform in big lots and it is easier to get the number, quality and weight desired with western lambs than with native lambs.

To the average farmer in Maryland the feeding of white-faced western lambs has four advantages:

1. It is a short-time project, usually lasting less than 120 days.
2. Home-grown feeds, such as corn and hay, can be utilized, and it enables the farmer to sell his feed at a much higher price per pound, when marketed in the form of lamb, than he could get for it as feed.
3. To most farmers, especially those raising cash crops, the greatest problem is that of keeping the summer labor busy during the winter months. When western lambs are fed, the farm labor is kept busy during the slack winter months.
4. A carload of feeder lambs will produce a large quantity of manure, which is very valuable as a fertilizer, especially on high-producing cash crops.

The average farmer should remember one thing, however, if he desires to feed lambs—he must feed year after year and take his losses with his profits, for he cannot expect to feed periodically and hit the high markets.

The third type of 4-H Club project that I would like to bring to your attention is very new. It has been proposed, but as yet no club member has taken advantage of it. The plan is for a club member to buy at least five crossbred western ewes, carrying quite a bit of Merino blood, and breed them to a good type mutton ram to produce lambs in December or early January. The lambs could be sold in the early spring weighing from 60 to 70 pounds and should meet with good demand at that time. The boys would realize two crops a year from the project; lambs and wool. In addition, they would acquire experience in the care and management of a breeding flock along such lines as docking and castrating lambs, and shearing sheep, as well as the feeding of the lambs and ewes. It is hoped that the boys will increase the ewe flock, either by saving the ewe lambs or by purchasing more ewes, so that a larger flock will be kept as the boys acquire more experience. Good quality native lambs will be produced and should meet with good demand in the local markets. As the boys get more experience, they may want to increase the size of the sheep flock so that sheep will become an important enterprise on the farm. A small flock would be useful in utilizing the rougher, hilly pasture land as well as in cleaning up hedge rows and undesirable weeds and shrub. Those boys who become interested in this sheep enterprise may, in time, desire to start in the purebred business, but for the present, the outlet

seems to be in the production of good native market lambs. Western ewes with some Merino blood are recommended for the following reasons:

1. They are usually more free from internal parasites.
2. They must have this breeding in order to breed early and produce lambs in December or January.
3. They are usually hardier than native ewes.

Dorset ewes will also breed out of season. A Dorset-Merino cross makes a very desirable ewe for this purpose. When crossed with a good mutton type ram, the lambs are of a good market type, develop early and make good gains.

Good purebred mutton rams are desired to sire these lambs, and it is hoped that members of the Maryland Stockmen's Association, who have sheep, will cooperate by helping to supply these rams. We feel that this project will not only stimulate interest in producing a better quality market lamb, but will stimulate interest in sheep projects, both in purebred and commercial flocks.

I have outlined these 4-H Club projects because we have found, that by introducing a new project through the 4-H Club, farmers soon realize its advantages and will become interested in starting it on their own farm. We sincerely believe that there is a place for more sheep in Maryland, and especially along the lines I have mentioned. For a short-term project, feeder lambs are desirable; for a longer-term project, the production of good crossbred native lambs, using western ewes and good mutton sires, is recommended.

MR. BAILEY: Thank you Mr. Outhouse. While I think of it, I might mention here that we had listed first on the afternoon program the showing of motion pictures on pasture improvement by Mr. Robert Engle of Washington, D. C., but we have decided to show these at the conclusion of the afternoon session because it would help to demonstrate some of the talks to be given at that time. Our last speaker on this morning's program is Dr. Kenneth L. Turk, Professor of Dairy Production, University of Maryland. Dr. Turk will speak on grass and legume silage for beef cattle.

LEGUME AND GRASS SILAGE FOR BEEF CATTLE

KENNETH L. TURK

Before we discuss the value of legume or grass silage as a feed for beef cattle, let us first consider whether livestock farmers in Maryland should make their legume and grass crops into silage rather than hay. Crops can be made into hay more cheaply than they can be made into silage. Making hay requires less labor and less expensive equipment. When it is possible to make grass and legume crops into good quality

hay, there is little or no advantage in putting them into the silo. Good quality hay will provide practically all of the nutrients found in the silage and will furnish them at a lower cost.

However, unfavorable weather frequently makes the production of high-quality hay difficult in many sections of Maryland. It is not uncommon for farmers to experience losses in quality and in nutrients amounting from 20 to 50 per cent in attempting to cure hay. On the other hand, the weather is a negligible factor in making silage, especially if the farmer does not object to working in the rain.

While there is some loss in nutrients, about 10 per cent on an average, when a crop undergoes fermentations in the silo, the losses are significantly less than in the making of hay under unfavorable weather conditions. Difficult weather will occur more frequently in the spring when the first cutting alfalfa or clover is ready to be harvested. Also, the weather is often bad in the fall when soybeans are ready to harvest. These conditions often recommend the practice of making silage out of part or all of the first cutting of hay in the seasons when weather will not permit the making of hay.

The Place of Legume and Grass Silage

Experiments at various agricultural colleges and experiences of many livestock farmers have amply demonstrated that any hay crop can be made into silage successfully by any one of the several methods now in use. Also, they have shown that legume and grass silages will make satisfactory livestock feeds. Yet in determining the proper place of legume and grass silage in the program of any farm, the farmer should ask himself how well these silages will meet the needs of his particular farm. It should be determined to what extent legume or grass silage can be profitably used to replace corn silage in the crop rotation and in the ration, to replace dry hay, and to supplement pasture during the summer months. What might prove to be a good program on one farm might prove to be unsound on another.

Legume Silage and Corn Silage

On farms to which it is adapted, a crop of corn will yield more total digestible nutrients per acre than any other crop. Other arguments favor the continued use of corn as a silage crop in many cases. The labor problem is simplified because corn is harvested later in the season. A crop of corn for silage in the rotation offers some crop insurance. Hays make their maximum growth early in the season, while corn makes most of its growth from midsummer on. In case of bad weather for hay crops early in the growing season, a corn crop might easily prevent the occurrence of a feed shortage. It provides a cultivated crop in the rotation and corn is a crop capable of making the maximum use of plant nutrients stored in the soil. While legume and grass silages have an important place in Maryland agriculture there is some question as to how far they should go in replacing corn for silage.

Crops for Silage

The best silage will be made from the crops that are best for hay—those having high yield, good palatability, high feeding value, and low production costs. While weedy crops will make a fair silage, one cannot expect much improvement in the nutritive value of a crop by putting it in the silo.

Legumes are preferable to grasses because of their high yield, more favorable effect on the soil, and higher protein content. On many farms a mixture of legumes and grasses is raised and makes a good crop for ensiling. Grasses alone make a satisfactory silage, but they are lower in protein and calcium and will generally give less tonnage per acre. Desirable silage may be made from the cereal crops—oats, wheat, barley and rye—grown alone or in combination with peas or vetch.

Nearly all of the silages made from legumes and grasses cut in the early stages of maturity will be higher in protein than corn silage. Due to its content of corn grain, however, corn silage will furnish a higher percentage of total digestible nutrients than will legume or grass silage.

Methods of Making Silage from Grasses and Legumes

There are several methods of making silage from the grasses and legumes. Time will not permit a detailed discussion of each method; therefore, only a few of the pertinent points about the methods now in use in Maryland will be given.

No doubt the method which has been most used is one involving the addition of cane or beet molasses when the crop is put into the silo. The theory underlying this practice is that the molasses will provide the easily fermentable sugars which will be converted into acids and help preserve the silage. There is some question in the minds of certain investigators as to whether acids are required for the prevention of molding or rotting of the silage; however, acids do help to make a nice smelling and more palatable silage under some conditions. Investigations have shown that a large part of the sugar in molasses is converted into compounds other than acids, with the acidity being increased only slightly. The amounts of molasses usually recommended vary from 40 to 80 pounds for each ton of green material. This will make the molasses cost from 50 cents to $1.00 per ton of silage.

Liquid phosphoric acid as a preservative has been used in many cases. It is claimed that this acid prevents undesirable fermentations and thereby helps to preserve the silage. The amount recommended varies from 8 to 18 pounds to the ton depending upon the crop and the strength of the phosphoric acid. At present prices the cost of phosphoric acid will exceed slightly the cost of molasses as a preservative. The advantages given for the phosphoric acid method are (1) it is easier to apply than molasses; (2) it will correct any deficiency of

phosphorus in the ration, and (3) any phosphorus which is not used by the animal is returned to the soil through the manure. Care should be taken that the acid used is free from fluorine and arsenic. While it appears that silage produced with this method is fully equal in feeding value to that produced by the other methods, it cannot be recommended as unreservedly as the other methods until long-time experiments definitely prove that the acid will produce no injurious effect. As a precaution, it might be wise to feed some ground limestone in the ration when this silage is fed, especially if the silage was made from grasses.

Some investigators, especially Dr. T. E. Woodward and his associates at the National Research Center at Beltsville, believe that the cheapest and best method of making silage from the grasses and legumes is to wilt the crop enough so that it will not have over 70 per cent of water, and put it in the silo with no preservative. With the crop cut at the right stage for hay, this would require from two to four hours of drying on a good hay curing day or longer on a poor drying day. With more mature crops in dry weather, the moisture content would probably not exceed 65 per cent and they could be put into the silo with no further drying.

Grass and legume crops put into the silo without any preservative will make good silage providing the crop is well packed to exclude the air. The drier the crop, the more difficult it is to exclude the air and the more necessary it is to have tight walls and doors in the silos. Wilting a crop will prevent much of the leakage of juices from the silo. This leakage wastes nutrients, is a nuisance on the farm, and may damage the silos.

While the wilting method has its advantages, it offers some difficulties, chiefly that of determining on the farm the point at which the crop contains the right moisture content to make good silage. It also requires more care in chopping the material finely and packing in the silo so that all of the air will be excluded.

Some Precautions in Filling the Silo

Any well-built, properly filled silo will preserve grass or legume silage. Some silos may need some extra hoops near the bottom where the pressure is greatest. Spoilage should be no greater than with corn silage if a few precautions are taken in filling the silo. Hay crops differ from corn in that the chopped material will mat together and build up with vertical sides rather than slide off to form a cone shaped mass as with corn. Because of this difference, air pockets are more likely to be formed, especially around the outer edges. It appears desirable, therefore, to distribute the silage evenly and pack it thoroughly, especially the top third of each filling. When feeding is not to begin immediately, surface spoilage can be checked by sealing the silo with a foot or more of wet weeds, straw, sawdust, or other material. A layer of tar paper between the silage and the sealing material will help considerably.

Feeding Value of Legume and Grass Silage for Beef Cattle

The feeding value of any silage made from the grasses or legumes will depend upon the quality of the crop when it is ensiled. Also, the composition and feeding value will vary with the crop from which it is made. For example, alfalfa silage will be higher in protein than corn silage or silage made from cereals or grasses, yet corn silage will probably contain a larger proportion of total digestible nutrients than any of the others. The most important fact to recognize in feeding legume or grass silage is that its feeding value will differ with variations in the moisture content. It will take more pounds of high moisture silage to furnish feeding value equal to fewer pounds of a lower moisture silage. These facts must be kept in mind when feeding silage made from the hay crops, and the rest of the ration must be made to supplement adequately the kind and quality of silage being fed.

There have been few experiments reported with legume or grass silage for beef cattle. One recent report from the Michigan Experiment Station is of value on this subject. The results from one experiment with fattening steers have indicated that alfalfa-clover-molasses silage is a more desirable feed than hay made from a similar crop. Two lots of ten steers each received the same amount of shelled corn and protein supplement while one lot received an average of 12.8 pounds of hay per day and the other lot consumed 37.7 pounds of alfalfa-clover silage. The silage lot gained 2.17 pounds per day while the hay group gained 1.88 pounds per day. On a feed replacement basis, 1 ton of alfalfa-clover-silage was equal to 786.6 pounds of hay, 96.9 pounds of corn, and 1.2 pounds of cottonseed meal. A third lot of steers received a small amount of hay, full feeding of corn silage, and 2.24 pounds of cottonseed meal per day. These steers made a daily gain of 1.91 pounds. In comparing the two silage lots, 1 ton of alfalfa-clover silage, plus 612.5 pounds of corn was equal to 3,138.4 pounds of corn silage, and 123.4 pounds of cottonseed meal, and 88.8 pounds of hay. It was necessary to add 1 pound of grain per day per hundredweight of steer to the legume hay or legume silage ration in order to produce gain and finish equivalent to that obtained by the steers which were full-fed on well eared corn silage and hay, balanced for protein with cottonseed meal.

Two feeding trials have been conducted at the Pennsylvania Experiment Station to compare corn silage, alfalfa-molasses silage, and alfalfa hay as roughages for fattening steers. All lots received corn-and-cob-meal and a small amount of protein supplement was added to the lot receiving corn silage. For each 100 pounds gain in weight lot 1 required 607 pounds corn, 630 pounds corn silage, and 62.5 pounds soybean oil meal; lot 2 required 588 pounds corn and 953 pounds alfalfa-molasses silage, while lot 3 required 618 pounds corn and 417 pounds alfalfa hay. One ton of alfalfa-molasses silage replaced 875 pounds of alfalfa hay and 30 pounds of corn-and-cob meal. In comparison with corn silage, 1 ton of alfalfa silage replaced 40.9 pounds of corn, 1,322.1

pounds of corn silage, and 131.2 pounds of soybean oil meal. These experiments agree with the Michigan results, indicating that legume silage was slightly superior to hay in producing grains, but worth somewhat less than corn silage pound for pound.

These limited experiments and experiences of farmers would indicate that grass or legume silage can replace part or all of the dry hay or the corn silage in the rations for fattening steers with satisfactory results. Since there may be a difference in the moisture content of corn silage and the hay crop silages it may be necessary to feed a proportionately larger amount of grass or legume silage. If the silage is made from legume, the amount of protein supplement may be reduced below that required with corn silage. In replacing part of the hay with legume or grass silage, about 3 pounds or more of the silage should be fed in place of the dry hay. If the silage is high in water content, it may take as much as 4 pounds to replace 1 pound of hay to furnish the same total dry matter in the ration.

While no experiments are available, experiences have indicated that legume or grass silage can be satisfactorily used as a part of the ration for beef breeding cows and heifers to replace the corn silage or part of the hay. It should be a useful feed for all beef animals being carried through the winter. No doubt many farmers will find legume and grass silage useful as a supplement to scanty pastures during the dry summer months.

MR. BAILEY: This concludes our morning session. We will now adjourn for luncheon and the afternoon session will begin promptly at 2:00 P. M.

AFTERNOON SESSION

MR. BAILEY: I regret to report at this time that we have received a telegram from Mr. David Cohen, who was to be our first speaker on this afternoon's program. Mr. Cohen is ill and will therefore be unable to take his place with us. Before we introduce the next speaker, we will devote the time Mr. Cohen would have taken to some discussion, either specific or general, on the livestock industry in the State.

MR. J. C. CASH: Unfortunately, I couldn't be here this morning and I do not know what transpired or whether I am repeating what was said, but I was thinking about what has happened to the sheep business in Maryland and why we shouldn't have more of a business than we have—why West Virginia and Virginia should be real good sheep states and we go down-hill and keep going down. The figures published each year indicate the trend in the country. I believe Virginia produces one-half million lambs a year and, if I remember correctly, I believe our sheep population is a little over 80,000 in Maryland. I believe the big point in that is dogs and I imagine B. A. Rucker mentioned that. Maybe this is the support that the Maryland Stockmen's Association should really render and furnish a competent dog law to take care of

the situation. I do not know just how much trouble you will run into to get a state dog law. Whether you can get a man to foster such a bill, I do not know, but I think that is one item particularly wrong with the sheep industry and one part of our livestock industry in Maryland.

MR. BAILEY: I think that is very inetresting in the light of the fact that Mr. Cash was not here this morning and should pick on this subject. There is a great deal of opposition against any law that will keep dogs under control. I think that we might be the focus of some sort of action on this and I think it would be an excellent goal toward which to work this year.

MR. STABLER: In Montgomery County we do have a dog law which, if enforced, would create a lot more favorable conditions for sheep. However, as a sheep man, my experience has been that it is not hunting dogs that do as much damage as the mongrel and I think the owners of these dogs should be made to pay taxes for their dogs. Only about one-third of the dogs in our section of the county had licenses bought for them this year, and it is the people who do not buy the licenses who let their dogs run loose and kill the sheep. I think Montgomery County has had a dog law for a great many years and I believe it is more the fault of administration rather than lack of law.

MR. MUNCASTER: I am a resident of Montgomery County and our law has been in existence for 35 years and was originally a law for the State of Maryland. This law was passed and was the original dog law and had a provision requiring three disinterested administrators to appraise the value of sheep or other stock lost. It now covers any class of livestock or poultry. The appraisement has been changed so that now the police force in Montgomery County handle it. When stock is killed, you simply call the police who certify that the stock has been killed and get the owner's valuation, which is sent to the Commissioner's office and paid. This law was applied to the entire State of Maryland.

MR. CASH: In line with the remarks that have been made, I did talk a great deal with Dr. Mark Welsh and he has investigated a number of different dog laws in various states. If a committee is chosen or some action is taken on this dog law, Dr. Welsh could probably be of assistance.

MR. MUNCASTER: In the enforcement of the law in Montgomery County, the constable of each district collected the tax. The tax is now paid to the clerk of the police court and is due about the first of April. The dog damage in our county is very slight.

MR. BAILEY: I think you are very fortunate in Montgomery County and I will wait until the end of the session and appoint a committee of three, the Chairman responsible for all of them, to look into the existing laws and the enforcement of laws, and see if Mr. Derr and the

rest of the boys couldn't bring back some sort of definite statement next year about the progress made.

There being no further comments, we will now hear from Mr. C. F. Hockley, President of the Maryland Horse Breeders' Association and also of the Davison Chemical Corporation, who will speak to us about pastures for horses.

PASTURES—WITH SOME OBSERVATIONS ON PASTURES FOR HORSES

CHESTER F. HOCKLEY

The improvement and management of pastures for horses is a subject to which I have given a great deal of study.

When the first Englishmen landed in Jamestown in 1607 they could not be fully aware of the richness of the lands they were about to inherit. Here, undisturbed by axe or plough, nature had, during countless centuries, built up fertility in the soils such as was enjoyed nowhere else in the civilized world. Here, for the first time, these English pioneers were given a chance to realize economic independence. On this basis, they in time established a new order of political liberty.

Let us consider the setting: Virgin forest stretched from the seaboard to the great prairie regions of the west. The rich, black meadows and prairie soils were a vast storehouse of plant food, slowly built up during the centuries in nature's own laboratory with a system of grasses and buffalos. Beyond the prairies came the great plains area, and beyond them rose the Rockies with their vast stores of minerals and timber. Soil, grass, timber and minerals—these are the essential capital of any nation, and on these the pioneer fathers built the solid foundations of our country.

Many of us for pleasure or business have travelled a lot over this land of ours—north, south, east and west. We have seen corn, cotton, tobacco and grains where once the forests stood. About one-half of the total area of the United States is in farms. Of this total farm area, one-half is in crops, and the other, about four hundred million acres, is in pastures, woodland and waste.

But of the once vast fertile areas of our country, about six hundred fifty thousand farms, comprising about one hundred million acres, today cannot raise crops at a profit. The virgin fertility of the colonial days was exploited and wasted in a manner hard to believe. Those early settlers had brought with them a knowledge of farming which was based on good husbandry. The farmers of Europe have always had to farm so as to conserve soil fertility, but when these same farmers saw before them the vast resources of this virgin continent, they apparently forgot the principles of good farming and forestry. When the land which at first produced such big crops of tobacco became impoverished through bad management, the farmer pulled up stakes and moved on to fresh acres. By the end of the 17th century the problem of exhausted soil

was already acute in Maryland and neighboring Virginia. What happened in our state was repeated, in time, in all states. Ruthless exploitation and waste of the richest lands in the world has been the history of three centuries of settlement. Today the whole nation is burdened with the social and economic consequences of that mismanagement of our natural soil resources.

Recently a cartoon appeared in one of our widely read weeklies about people of today. It carried the words: "We are the posterity for whom our grandfathers prayed. . . . Can you blame them?" When I consider today's soil fertility problems and realize how our social and economic situation can be traced back to the abuses and mismanagement of the rich inheritance of our forefathers in this land, I often think of that cartoon and the double-meaning words of the cynical artist: "Can you blame them?"

Yet the problems, serious as they are, can be solved. One of the best ways to attack the problem is, in my humble opinion, to return to the wise principles of farm management which prevail in European countries today and which our pioneer fathers forsook. A return must be made to that system of farming which recognizes the value of livestock and the building up and maintenance of good pastures in the farm program.

Though the subject allotted to me is pastures for horses, I would like to first discuss pastures from a general viewpoint, for all livestock. This is a most fascinating subject and I regret that time will permit me to make only the most general observations on any one phase of it.

Animals Thrive on Certain Soil Areas

It is well recognized among stockmen and breeders in particular that there are certain soil areas where livestock thrive better than in other parts of the country. We are all familiar with the manner in which grazing animals, and this is particularly true of horses, will crop too closely certain areas in a field and leave other parts of that same field practically untouched. Different sections of our country differ to the same degree. What makes some areas excel other parts of the country? Is it climate? Soil? Sires? or Man?

We can now answer definitely, it seems to me, that the outstanding reason why animals do so well in areas noted for producing the best livestock is because the grasses and other forage which grow there contain a sufficient amount of minerals and other nutrients so necessary to normal growth and health and vigor. In other sections, where animals do not do so well, the reason is found in the lower fertility level of the soil. Animals, in other words, will thrive where the pasture feed contains all essential nutrients, and will attain only that degree of health and vigor that is permitted them by the fertility level of any one of the essential nutrients. If phosphorus is deficient, for example, it will be the limiting factor.

This relationship between soil fertility and thriftiness of livestock is accepted today by science as well established by research. The idea, however, is not new. Over a century ago a Scotchman, William Aiton, published in Glasgow a book in which he discussed the connection between soil and the well-being of cattle. He said, among other sound things:

> "The soil, climate, and mode of feeding and treatment, so powerfully affect the size and qualities of cattle, that it becomes impossible to raise them above what these can support. Every soil is calculated to support cattle, of a weight and quality, suited to its fertility. When cattle are removed to a better soil, or when, by culture or other means, the soil, on which they are kept, is improved, a proportional improvement may be expected in the breed. But if cattle are removed to a soil greatly inferior to that on which they have been reared, they will degenerate and dwindle down to the size and qualities that the soil, on which they are fed, is capable of supporting."

Two other British authorities on livestock *a century ago* made similar observations. One, David Low of Edinburgh University, stated:

> "It is upon the supply of food that the size of the animals seems mainly to depend. Wherever food is supplied in abundance, the ox becomes enlarged in bulk; and wherever food is deficient, whatever be the nature of the climate, his size becomes less."

The other authority, a sheepman, writing in 1831, said, in discussing an anemia in sheep called "pining":

> "On genuine pining farms sheep do not take it by ones or twos but a whole flock at once. . . . There is only one effective cure known in this country, which is a change of pasture to one of more succulent herbage. . . . If the sheep are laid on clover or limed ground, the cure is the quicker. . . . The pining is not infectious. . . . After dear experience I am convinced that it proceeds wholly from the food."

These old observers did not have the advantage of science and the nutritional laboratories which we of today are privileged to have. We now know they were right, and the only difference between them and ourselves is that we are more able to understand the whys and wherefores underlying the conditions and consequently can do more to permanently correct them.

Livestock Need Minerals

We must accept the fact, then, that a soil lacking essential mineral nutrients cannot support vigorous, healthy animals because the forage growing on such soil cannot possibly have those elements. If they are

not in the soil, they will not be in the forage cropped on that soil. Fortunately, in our day, science has shown us how to make rapid chemical tests to determine what elements are contained in a soil and also in the herbage. Where it is determined that any elements are lacking we then know how to restore the deficient minerals by means of suitable fertilizers, phosphatic materials and lime; and how best to utilize those minerals by proper pasture management.

Phosphorus and lime are two elements essential in the nutrition of all animals. These two compose about three-fourths of the mineral matter of their bodies, and over nine-tenths of the mineral matter of the skeleton. These two minerals make up more than half of the total mineral content of milk. Farms in the older agricultural areas are, of course, more apt to show phosphorus and lime deficiency. Our State Experiment Station reports that phosphorus is deficient in practically every soil type in Maryland, and this is true of the whole Atlantic slope.

The first essential in the improvement of pastures on all soils in Maryland, in fact, in all the northeastern states, is to provide an adequate supply of available phosphorus. This can be supplied most economically in the form of superphosphate and agricultural authorities seem to be recommending it now almost universally. In addition to this my belief in it is based on actual experience on my own farm.

Cause of Poor Pastures

It has been my observation that most of the pastures in Baltimore and Harford Counties comprise sloping lands which are subject to severe erosion. While some of these lands have fairly good sod, the majority, unfortunately, do not, and unless something is done to improve them they remain a serious problem in conserving soil fertility and in the prevention of soil erosion. Yet these two counties and the neighboring counties of Howard, Carroll and Cecil, comprising the Piedmont soils, have the most favorable conditions for pasture in Maryland, and we should capitalize on them.

State authorities in all the northeastern states have estimated that most of the untreated permanent pastures in this section require five to six acres to carry one animal unit. This is a low and profitless carrying capacity, and is due to the poor type and quality of herbage present. Kentucky bluegrass and white clover, the two best types of herbage for our local pastures, are present even on the better types of pasture to the extent of only about one-fourth to one-third of what they should be. In their place we have weeds and poor native grasses that yield little nourishment for animals and make a thin sod subject to increasing erosion. Furthermore, exhaustive research in this section leads to the conclusion that, even under most favorable growing seasons, it is not possible to bring about improvement in these permanent pastures unless something positive is done to increase the mineral and humus content of the soils.

The evidence points clearly to two main causes for the large percentage of poor pastures: one, soil acidity; the other, depleted fertility. Having thus diagnosed the trouble we can suggest the remedy.

Lime is needed on practically all of our pastures before Kentucky bluegrass and white clover can be re-established. Phosphorus is needed to an even greater degree on all pastures. Soil tests in every part of our State show this need, and it is not surprising when we consider the demand for these elements. Lime and phosphorus are the main components of the animal skeleton. One per cent of the weight of a mature horse is phosphorus and two per cent is calcium. Every can of milk, every animal sold off the farm, every ton of hay, represents a consumption of lime and phosphorus which comes out of the soil. Wheat and oats contain about 75 per cent of their total phosphorus in the grain. Every bushel of these grains sold means a loss of 75 per cent of the phosphorus they took out of the soil. What phosphorus a plant removes is that which is the best and most available portion in the soil.

Phosphorus consumption has been going on with no let-up for at least two centuries, during which time only little, if any, fertility was returned to the soil. When we consider that some of the most fertile virgin soils have on the average not more than 1,500 pounds of available phosphorus to the plough-depth acre, it is not surprising that a serious deficiency of this mineral exists in our old soils. A good crop of corn, say 17 barrels per acre, removes about 15 pounds of phosphorus from the soil; thus, the *total* amount of this element in virgin soils was enough for only 100 crops of corn. When a farmer applies 250 pounds of a 2-12-6 fertilizer to the acre of corn, he is putting on only about 9 pounds of phosphorus. This is short by about 6 pounds of what the crop uses in its growth. You cannot build up fertility reserves that way, and the depletion has been going on for 200 years and at a greater rate of loss than these figures indicate, since during the first 100 years no chemical fertilizers were used and the only replacement was through the use of manure. The same depletion that occurs with corn occurs with other crops. With the possible exception of the farmer who grows truck crops, it is safe to say that most farmers take out of the soil more fertility than they replace by fertilizers and good soil management.

The amount of phosphorus lost by erosion is also a big drain on the supply. This loss is accentuated by row crops. Phosphorus is found in the very fine clay particles of the soil which are the particles most easily carried away by rain water. On land having a 3.7 per cent slope, it has been shown that more phosphorus was *lost* by erosion in one year where corn was continuously grown than is contained in a 20-barrel crop of corn (18 lbs.); where wheat was grown continuously the loss was 9.4 pounds; where a good rotation was practiced (corn, wheat, clover hay) the loss was 6.2 pounds; and where continuous bluegrass sod was the cover, the loss of phosphorus was only two-tenths of a pound.

Mineral Ferilization

I do not mean this to be a sales talk, but we cannot discuss pastures without referring to phosphorus, and we cannot discuss phosphorus without mentioning superphosphate. The cheapest form of phosphorus for the farmer is 20 per cent superphosphate, and it pays well to use about 600 to 800 pounds per acre on the first application. On some of my pasture fields on a run-down farm I have applied 1,500 and 2,000 pounds per acre, and after pasturing these fields two seasons at the rate of three animal units per acre, the soil tests showed that they were again deficient in available phosphorus. However, this was after intensive grazing and the effect of the minerals was evident in the growth and condition of both horses and cattle.

Lime

Lime is of equal importance with phosphorus in the pasture program. I often wonder why it is that farmers in one state use it to advantage while farmers in other states of the same agricultural region fail to use it. Kentucky, in 1936, used the equivalent of 124 pounds of lime oxide per acre of crop land, while Maryland used 57.6 pounds; and Pennsylvania 46.5 pounds; New Jersey 75 pounds; West Virginia 18.6 pounds; New York 29 pounds. The need for lime in all these states is quite similar, but the farming practice varies. Kentucky breeders give credit to their soil, but without the generous use of lime year in and year out their claims would not stand up. Over 100 years ago Edmund Ruffin, a practical farmer in Virginia, was the first man we have any record of who tested soils chemically and who inferred that most of our soils were too acid and needed lime. Apparently, it has taken us 100 years to learn, but fortunately the attitude toward lime is changing.

Most of our pasture soils are acid and, consequently, have a higher power for rendering soluble phosphoric acid insoluble. I have found it desirable to apply finely powdered limestone at the rate of one to two tons per acre, depending on the soil test, several weeks prior to top dressings with superphosphate. This is important if one is to obtain the full benefits of the phosphorus. When applied as superphosphate, the phosphorus is in a soluble form, available as plant food. Acid soils have the effect of rendering much of this available phosphorus insoluble, and hence of no value to the plant. This effect is known as "fixation" or locking up of the available phosphorus. By applying the limestone ahead of time a less acid or a more nearly neutral condition of the soil is created and this releases much more of the phosphorus for the use of the growing plants.

It is not good practice to apply lime and superphosphate at the same time because the lime is needed ahead of time to prepare the soil to maintain the availability of the phosphorus.

I have emphasized phosphorus and lime because they are the foundation for better bluegrass and white clover pastures. When you have a heavy sod of these grasses, you can be assured of greatest returns from your permanent pastures.

Protein in Pasture

Cornell University reports that our native wild white clover—not white Dutch clover—influences the yield and production of the pasture herbage. Their tests show that Kentucky bluegrass grown alone yielded 888 pounds of dry matter, whereas when wild white clover was grown with it, the yield was 4,985 pounds per acre. The clover also raised the protein content of the pasture grasses from 18 per cent to 31 per cent. This increase, of course, was mostly due to the high protein content of the clover; however, the tests also show that the protein of the bluegrass was raised on an average of about 25 per cent. It was estimated from these tests that the herbage removed from one acre of good bluegrass-white clover pasture contained an amount of protein equivalent to the nitrogen in approximately 1,200 pounds of sulfate of ammonia.

That, it seems to me, is one of the most economical ways to get digestible nutrients for livestock feeding.

Results at Beltsville, Maryland, in West Virginia, in New Jersey and Ohio, and, in fact, in every state in this northeastern region, emphasize the same thing: lime and phosphorus increase desirable grasses and legumes, decrease weeds and poor native grasses, and increase the percentage of protein and minerals in the herbage. They permit a larger carrying capacity on the same acreage; one to two cows per acre on improved pastures instead of one animal unit on five acres, and undernourished at that. The Pennsylvania Experiment Station reports: "A well-fertilized bluegrass pasture is capable of furnishing three times the digestible crude protein supplied by a four-year rotation of corn, oats, wheat and grass. An equal area of bluegrass pasture is capable of producing more total digestible nutrients than is produced by a grain rotation on the same soil."

Other Minerals. Manganese, Copper

Other minerals may be required on your pastures. Soil analysis should always be used to determine what these may be. Many pastures will need potash in the early stages of the improvement program. When needed, it can be applied alone in the form of muriate of potash, or with superphosphate.

In the case of horse pastures, it is quite probable that manganese and copper, and perhaps boron, are also needed, and when supplied in suitable quantities, as determined by the soil test, will prove highly beneficial. Manganese is applied as manganese sulfate; copper is applied as copper sulfate. Both are applied at the rate of 75 pounds per ton of fertilizer and will probably produce improved results in the growth of young horses which will well justify the cost of these minerals.

The Kentucky Experiment Station, reporting on the chemical analysis of their soils to which I referred above, says: "Manganese is an essential element for the growth of plants. . . . Kentucky bluegrass is particularly rich in manganese and affords an interesting example of the

function manganese has in the development of the beautiful deep green color which is a characteristic property of the luxuriant bluegrass pastures...

"The occurrence of copper in Kentucky bluegrass and in other substances which are rich in the vitamin A factor suggests the possibility of an important biological function for this element in the normal process of growth and development in plants and animals. . . . The soils of the Blue Grass Region and the Trenton area in Kentucky are richer in copper, manganese, zinc, nickel and cobalt than the soils of other parts of the State."

Nitrogen is also very important in the pasture program. However, it is my observation that if we provide generously the mineral nutrients already stressed, clovers and other legumes will be stimulated and these will provide the nitrogen required. Where pastures have been so neglected that no wild white clover is present, it will be necessary to sow one pound of seed per acre early in March and to apply a complete fertilizer prior to the seeding.

Manure can be used to advantage on very poor pastures whose thin soils are low in organic matter and where erosion possibility prevents seeding with green cover crops. Manure, however, is low in phosphorus but valuable for its organic content, and, when supplemented with 20 per cent superphosphate, has been used with excellent results, applied at about 8 tons per acre in the fall. The manured fields are grazed the following spring and mowed as closely as possible in May; clipping the grass at this time permits the white clover to come through and get well established.

Grazing

Having high-lighted some of the requirements for restoring or rebuilding pastures, I will refer briefly to grazing practices.

A cow or steer is said to consume about 100 to 150 pounds of green pasture herbage a day. It is estimated that a horse will consume about 80 pounds of pasture herbage per day. Cows spend only about one-third of their time grazing, the other two-thirds they spend in lying down or under the shade chasing flies. To be able to eat 150 pounds of herbage in 8 hours requires that the animal must have a dense sod whose herbage is not taller than four to six inches. A cow's muzzle is only about three inches wide, and this three-inch mower must really work to cut off 150 pounds of herbage in 8 hours. Grass over 5 inches high is a hindrance and lacks nourishment. Young, short grass contains more nourishment, is much more palatable, and permits an animal to eat more in a unit of time. Thus, on well managed pastures the mowing machine covers the field from three to six times a season, depending upon the condition, pasture, and the amount of rainfall.

Grazing should not be started too early in the spring, or when the ground is still soft, as damage would be done to the young grass and the soft soil would puddle.

A system of alternate grazing of fields should be adopted, and each farm must work this out to suit its own needs and conditions.

Streamlining Cattle

Streamlining is a much over-worked word these days. It is applied to anything and everything. Sometime ago while talking with a friend from the far south I was amused when he applied it to the cattle in his state: "What I would like to know," he said, "is how we can streamline our local, native cattle." You probably know what he was referring to. It is pertinent to our present discussion. The cattle in many parts of the far south have to feed on grasses and weeds of such low mineral and protein content that they literally are forced to eat several times as much of the poor stuff as a cow on good pasture in order to get the same amount of mineral nutrients. It isn't any wonder that they worry about their cattle being pot-bellied. Yes, I told my southern friend, the way to streamline his cattle was to lime and superphosphate their pastures.

Even a Blind Horse Can Tell

In the feeding of live stock, we are concerned not only with how *much* grass and legume herbage is present but, of more importance, with its chemical composition, its digestibility and its palatability. The cow and the horse know more about pastures than many of us farmers—they eat the pasture, the farmer does not. Dr. Dodd, of the Ohio Experiment Station, is credited with the story of a blind horse that was turned out to graze on two different demonstration plots placed side by side. One plot was limed and phosphated; the other was not. The old blind mare grazed right up to the limit of the fertilized plot, moved along, took a nibble of the grass on the unfertilized plot, then turned right around and resumed grazing on the treated plot. Even a blind horse can tell the difference.

The difference in quality of pasture herbage can be definitely shown by chemical tests. The analyses from many agricultural stations show the phosphorus content of a given grass as low as one-tenth of one per cent, and under more favorable conditions the same grass will run as high as seven-tenths of one per cent. In such extremes, a cow (for example, those southern cattle just referred to) would have to eat seven times as much herbage in the one case as in the other in order to get an equivalent amount of phosphorus. In the same way, the lime content may vary from two-tenths of one per cent to two per cent; and the protein content may range from three per cent up to thirty per cent. With such low nutrient levels, even southern cattle cannot stretch their stomachs sufficiently to hold all the roughage necessary to supply their normal requirements.

While my remarks have covered generally many features about which much is being written today, they are based upon my own experience with Thoroughbred horses and beef cattle on my farm in Baltimore County.

When I bought the farm, the land was badly run down. Soil tests revealed a very acid soil, which in many fields, had been depleted of

practically all fertility. It was deficient in calcium, phosphorus, potassium, magnesium and other minerals, and much of it was low in organic matter. Bad soil management over a long period of years had exhausted the land's original fertility.

Much of the farm is rolling land, but the type of the soil was such that I was sure that with a good fertilizer program, plus grazing management such as I have briefly sketched, those rolling hills could be transformed into first-class permanent pastures. While three years is too short a time to accomplish that purpose, the results this fall have fully justified my expectations. If you will pardon the personal reference I would like to recite one or two of those experiences.

This past season I pastured a herd of late yearling Hereford steers on this farm. The average initial weight when they were first turned into pasture on April 25, 1939, was 742 pounds. After 214 days of pasture, the average final weight was 993 pounds, or a gain of 251 pounds per steer. This was an average daily gain per steer of 1.47 pounds.

The same steers had been roughed in the barn from November 26, 1938, to April 25, 1939—a period of 163 days—and had gained an average of 302 pounds per steer, equivalent to an average daily gain of 1.85 pounds per steer. The daily ration in the barn consisted of one and a half pounds of shelled corn, 20 pounds of grass and legume ensilage, and 10 pounds of cut dry hay, each item of which was grown and prepared on the farm referred to.

The steers came off pasture this fall looking sleek, fat and prime in every way. An average daily gain on grass pasture alone of 1.47 pounds per day for common steers compares favorably with gains reported from other parts of the country, and this growth on grass alone is the most economical gain possible. In Virginia the State and Federal authorities cooperated in a test to compare grass-fed with grain-fed beef. The grass-fed steers made a net gain in a given time of 344 pounds as against a net gain of 319 pounds for the grain-fed animals.

In the case of my steers, the results were obtained on run-down land on which we have not yet built up a sufficient reserve of minerals to prevent a complete lack of these minerals in the soil at the end of the grazing period last autumn. This lack was shown in soil tests made within the past three weeks. This is, of course, reasonable and to be expected, since the minerals required for the gain reported were taken from the soil and used in building up the animals' bodies. The steers, of course, followed the horses in the pastures.

Horse Pastures

Essentially, what has already been said about pastures in general holds true for pastures for horses. On most pastures there are some grasses other than bluegrass and white clover, and the horses will crop the small, tenderest herbage and leave untouched some species of grass

which will grow to almost maturity. As soon as the amount of desirable pasture tends to approach deficiency the horses are removed to fresh fields and we place steers or milch cows in the fields vacated by the horses. The cattle will graze down all the tall grasses except those which grow where droppings were deposited the previous year. After they have sufficiently grazed the field, the cattle follow the horses in the other field, and so on. Meanwhile the field from which the cattle were last removed is mowed with the cutter bar set from two to six inches, depending on the time of the year. During the hot days of summer the grass is cut higher to provide some shade and shelter for the more tender shoots. Late in the fall the grass is also cut at the higher level so as to permit it to go into winter in better shape. During the summer months the mower is followed with a chain harrow to spread the manure which the animals have dropped during the grazing period.

Among Thoroughbred breeders of other states, particularly Kentucky, various methods of grazing management are followed, depending upon many different conditions. These have been ably described in publications by Mr. Wayne Dinsmore, Secretary of the Horse and Mule Association of America. I am sorry I do not have the time to discuss these with you.

Speaking for Maryland conditions, I believe that if a farmer does an intelligent job of fertilizing and building up the humus of his soil, and manages his soil and pastures properly, he should experience gratifying success in the breeding of Thoroughbreds and draft horses, both purebred and grades.

Horses that race as two-year-olds need all the size and vigor possible for their age, and this can best be produced by starting them right by pasturing the mares on rich, mineralized pastures before the foals are born and continuing with the young horses on the same kind of grazing until they are old enough to be broken and placed in training. Breeders generally realize that there is nothing better for promoting vigorous growth in a young horse than grass grown on soils that are richly provided with all the necessary minerals.

This past year nine Thoroughbred foals were born on my farm: the first on February 19, the last on May 13. The mares had grazed on the grass pastures previously mentioned during the period when the foetal life they carried was developing. Hence, we can say the feed for both mares and foals was good, rich grass. You will be interested in the weight these foals made during the period before they were weaned.

Two weighed 80 pounds at birth; two weighed 100; one 95; one 110; and the heaviest weighed 120 pounds.

When they were weaned, the heaviest weighed 530 pounds, the lightest two 440 pounds.

The average daily gain per foal was 2.27 pounds. The highest daily gain was 2.48 pounds; the lowest was 1.91 pounds. All the foals but

two averaged better than 2 pounds gain per day; and of those two, one averaged 1.91 and the other 1.96 pounds.

It seems to me these gains are a creditable showing, especially when we consider that the pastures on which these horses grazed were, only two years ago, of the depleted, run-down kind typical of so much of the pasture land in this part of Maryland.

I have tried to emphasize these things: The importance of improved pastures in the farm program; that all green grass is not pasture; that most permanent pastures in the eastern half of our country are not good enough to support quality livestock on a profitable production basis; that pasture to be effective must supply the grazing animal with those minerals necessary for vigorous, healthy growth which nature provided the buffalo on our virgin soils; that animals will always show a preference for well fertilized herbage.

I have also tried to show from experience that it is possible to restore the fertility of depleted farm lands in Maryland to a level that will furnish herbage of high nutritional value for both cattle and horses.

We hear a great deal of discussion today from many sources about the need of restoring and increasing *National Income.* This is important and most desirable, of course. However, to provide a permanent income from any project it is necessary to maintain our capital intact. Fertile soil is the basic capital of any country. I feel that permanent national income starts with a nation's richest treasure, its natural resources; and the greatest of these of any nation is the soils of its agricultural sections. To restore and increase our National Income let us look to our National Capital—the fertility of our soils—and by improving our permanent pastures and balancing our farm programs by carrying more livestock per acre we can convert the soil depleting practices of our forefathers into a soil-building program that will restore both Capital and Income.

MR. BAILEY: The last speaker on our afternoon program is our newly elected President, Mr. Edward N. Derr, Walkersville, Maryland, who will address us on the draft horse industry.

THE DRAFT HORSE INDUSTRY

EDWARD N. DERR

Whether you know it or not, the draft horse industry is a very large one. According to the U. S. Department of Agriculture statistics in 1938, horses and mules on Maryland farms exceeded by $60,000 the value of dairy cattle in Maryland, and you know, the dairy industry is quite large in this State.

According to the reports of the secretaries of the Percheron and Belgian Draft Horse Associations of America, there were 6,077 colts registered in 1939, an increase of approximately 11 per cent over 1938. Transfers on animals sold, however, were off about the same per cent. The horse industry, like all others, has its cycles of high and low

points of demand. My opinion is that when the demand for horses is not so good is the time to get started in the business, and when the time comes that it begins to pick up, you will have stock growing up for sale that will return your investment. Also, it does not cost any more to keep a good horse than a poor one and there has never been a time when a good horse did not bring a high price, even when it is hard to sell poor ones at any price at all.

Figures bear out, I believe, that horse power on farms is still the most economical.

It is true that they are not as fast as tractor power, but a good, able team will turn over a great deal of work supplying their fuel from the feed raised on the farm as they are working, and, in addition, will raise a colt a year. Probably the most difficult situation with which the draft horse farmer has to contend is the labor. Getting men who can work a team as it should be worked and handled and who take an interest and pride in working a good team and doing their work, are few and far between. I think this is the main reason that a lot of farmers have resorted to using tractors.

To me there seems to be two clasess of breeders; the large breeder who goes in for the show type or sporting class of horses, most of which never see a collar and are always kept hog fat so that when their owner takes his friends out from the city he would rather tell them that here is a mare that he paid $2,000 for even though she had never raised any colt at all, than one that only cost $500 and is raising a three or four hundred colt each year, and the small breeder with a limited number of mares tilling his farm and raising colts each year for foundation stock, who seems to be the main wheel in the horse industry.

I think the horse is primarily intended for power, as the word draft implies, and I think that our Breed Associations and we farmers, would do well in advertising to use pictures of horses at work rather than in the show ring in order to get people to think of horses in terms of work rather than show horses.

Some people think that they cannot afford to keep purebred stock because it probably requires too much attention and that they should be kept in individual glass cages. This is not true. For instance, in winter it is not necessary to keep horses penned up in a stable when not working even if it is cold. Run them out in a field where they can exercise and get the sunshine. This is more healthful and a horse will keep much harder and sounder and when spring comes, the time to put him to regular work, he will stand up to it much better. Mares heavy in foal seem to have less trouble foaling if they are run out and get plenty of exercise or even worked lightly right up to foaling. When horses are not working and are running out even in winter, twice a day feeding is sufficient. In most cases, purebreds sell for about twice the average price of grades.

As evidence of what a group of small breeders can do through cooperation, I mention the Frederick County Percheron Breeders' Asso-

ciation. There are about 35 breeders owning approximately 300 head of purebred horses who have become recognized all over the United States, France and South America for their achievements. In addition to the Maryland State Fair, they were represented at the Ohio State Fair, with the first prize aged mare, which was later made Reserve Grand. Also, at the International Livestock Show with the third place aged mare, a very creditable showing, I think, in a few years.

MR. BAILEY: We will now have some moving pictures on pasture improvement shown by Mr. Robert Engle of the National Fertilizer Association, Washington, D. C.

Mr. Engle gave an illustrated talk in which proper pasture care and management, as well as methods of making and curing hay, were emphasized.

MR. BAILEY: This will conclude the day sessions of our Eleventh Annual Meeting and we will adjourn until 6:30 P. M., when we will hold our Evening Banquet at the Longfellow Hotel.

EVENING SESSION

Banquet

President George K. Bailey, presiding as toastmaster.

MR. BAILEY: I am delighted to see so many of our members stay over for the banquet this evening. First on the program this evening I would like to present Dr. Mark Welsh, State Veterinarian, Livestock Sanitary Service, University of Maryland.

LIVESTOCK HEALTH SANITATION

DR. MARK WELSH

I am very glad to again have the opportunity to meet with the outstanding cattle breeders of Maryland and for a few minutes to discuss with you our mutual problems on the control of animal diseases. Instead of telling you each year the kind and extent of disease in this State, I would like, some day, to be able to report to you that there was little or none. Although we have, very markedly, reduced the losses from tuberculosis, glanders, hog cholera, and many other infections, I doubt if the day when we have little, if any disease, will occur in the near future.

The function of the veterinarian is not necessarily to cure disease. He is rather the maintenance engineer of the livestock industry. The function of a maintenance engineer in a manufacturing plant is to replace worn out parts in machines, to repair broken equipment, to test the efficiency of machines and procedures, and, in fact, to keep everything in such condition that with normal operations the owner can make a profit. Obviously, the veterinarian's work with domestic farm stock is the same and no owner who is not making a profit out of his livestock

can long afford to hire veterinary service. Anyone who has efficient, profitable livestock cannot afford not to employ competent veterinary service.

Approximately 85 per cent of our cultivated land is used for the production of food for domestic animals. The grasses, the grains, and the forages we produce are of little value to us as humans until they have been converted by animals into such salable products as milk, meat, eggs and power. A hog, to all intents and purposes, is a farmer's bank into which he puts large amounts of feeds and concentrates in much the same manner that we, as children, saved our pennies in a pig bank. When the farmer wants his money, he takes the hog to the abattoir where his animated bank is opened and he gets his cash. If, unfortunately, the hog dies, the owner loses his feed, labor and investment and it is just as serious as if the local bank in which he has deposited his savings goes bankrupt. Both are spectacular happenings and in the majority of instances both are due to poor management. In fact, our records indicate that more livestock are lost each year because of poor sanitation and improper management than because of infectious disease.

I would like to mention just a few of these instances of minor loss that in the aggregate cost a tremendous sum and are almost entirely preventable. "Hardware Disease" causes much loss. Small pieces of wire, nails, glass, and other sharp objects seem to be readily eaten by cattle. When they get into the honey-comb portion of the stomach, they frequently lodge in such a position that they penetrate through the diaphragm muscle which separates the cavity containing the heart and lungs from the intestines. Not infrequently the point of the wire or nail penetrates the heart sac and carries a pus infection which slowly poisons the animal and causes death. The moral, of course, is to be certain that short pieces of baled hay wire, nails from building operations, glass, and other sharp objects are excluded from the field and pasture of cattle. Paris green and spray solutions are occasionally left in places where livestock have access to them and the results usually are fatal. Last year we had several deaths in cattle that were attracted to the salty taste of bags of commercial fertilizers left in fence corners and other places convenient to the livestock.

One of the most frequent causes of financial loss during the winter months is ice cold water from a frozen trough or stream. Animals coming from a warm barn soon become chilled and will not drink an adequate amount of water unless its temperature is around 45 or 50 degrees. On the average, a cow drinks about four and one-half pounds of water for each pound of milk she produces. When the water supply, for any reason, is reduced the milk flow is naturally reduced. Digestive disturbances and constipation also occur and may lead to serious consequences. I could mention many other points of improper management, carelessness, and a lack of sanitation that cause serious loss, but I hope that these will be a sufficient stimulus that when you go home

you will look with a critical eye upon your current practices and make such corrections as may be needed. It is quite likely that you will find conditions and procedures existing on your own premises that are obviously dangerous and you will be surprised that you have not observed them previously.

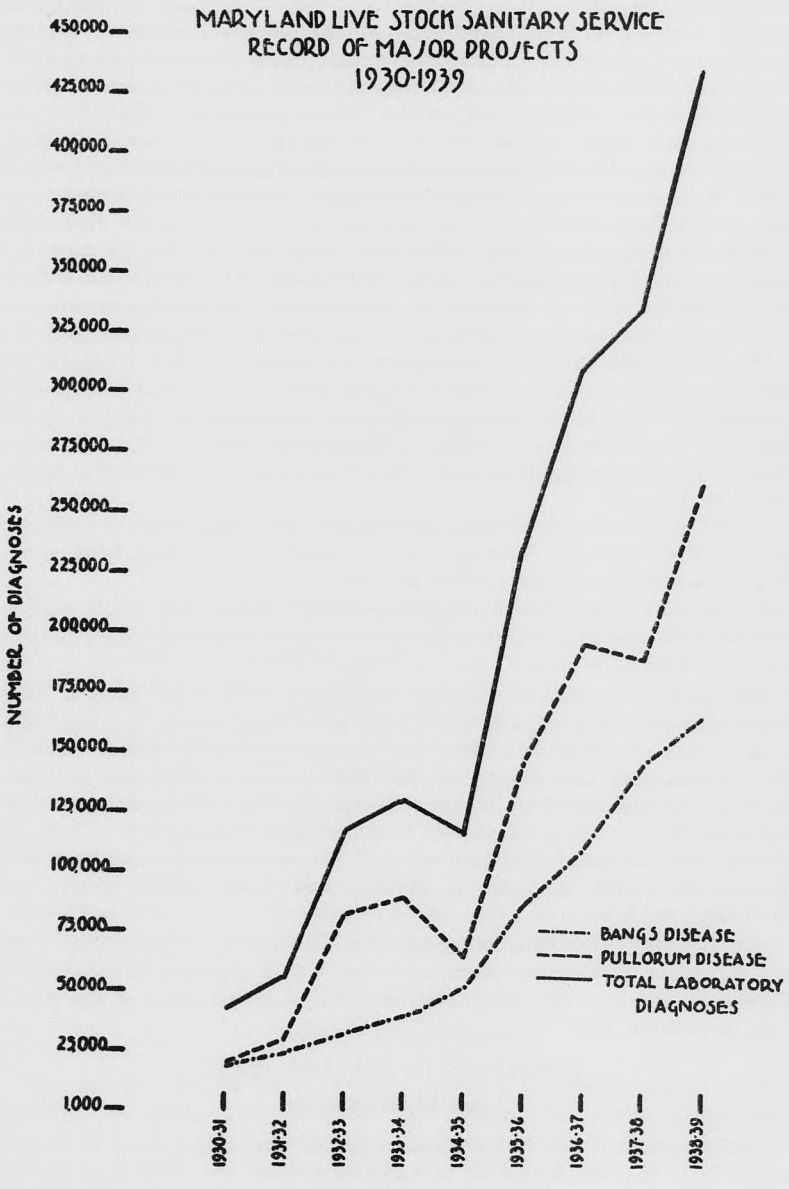
As to the infectious diseases in the State, no epidemic of serious proportion has occurred. Work on bovine tuberculosis has been continued as in the past, and although this infection has not been eradicated, it has certainly been kept to a point where it is not a serious menace. We still feel that annual testing of a herd is the best insurance we have at present against losses from this infection and all owners should follow the practice. Para-tuberculosis, or Johne's Disease, was found on 13 premises in the State and indemnity was paid on 21 animals slaughtered because of this infection. It is a slow, insidious intestinal disease that is difficult to eradicate from a herd because our tests are not as accurate in determining infected animals as certain of the other biological tests. In spite of this, in the past several years, we have apparently eradicated the disease from several infected herds. Trichomoniasis, a protozoan disease, apparently spread by the bull, has been found to be the cause of abortion in several herds. This is another infection upon which we should have more research work for the development of better diagnostic tests and treatment of infected animals. Certainly, it is not widespread in Maryland herds but has caused serious losses through aborted young and sterility of adults in those herds where it is now existing. Calf pneumonia and scours have appeared in almost epidemic form on certain farms and apparently may be caused by one or more groups of organisms. The treatment, therefore, varies and it is most important that an accurate diagnosis be made to determine the particular type of infection involved.

Equine Encephalomyelitis (horse disease) occurred in 10 of the 23 Maryland counties. Out of a total horse and mule population in these counties of 47,846 animals only 72 were apparently infected and 51 died, giving a mortality rate of 70 per cent of those affected. Out of the total population, however, only .001 per cent were infected. These cases occurred between August 1 and October 14, with a majority being reported between the 15th and 30th of September. With this relatively small loss we do not feel justified in recommending that all horses in the State be vaccinated, but we do recommend that those owning valuable animals avail themselves of the protection vaccination confers, and we advocate that all horses and mules be vaccinated in any community where the infection makes its appearance during the coming season. We feel that this disease may, at present, be handled as any other sporadic infection because of the efficient vaccine and serum now available. We have continued the work in testing the blood of mares for pregnancy and during the past year 568 samples were examined. The efficiency of the test has continued at approximately 97 per cent, which we feel, is very acceptable for a biological test of this type. It

is, of course, of primary importance to breeders of Thoroughbreds to know, as soon as possible, when a mare is settled, but it is also being more widely used by draft horse breeders. Periodic opthalmia of horses is still in the realm of the unsolved problems, but is probably no worse and certainly no better than in previous years. Research on this problem is being conducted at only a few places and the amount being spent for further investigation of this costly and serious ailment of the eyes of horses is certainly not in proportion to the costs and dangers of the disease. This statement is equally true of virtually all animal infections, many of which are transmissible to man with the possible exception of bovine tuberculosis and Bang's Disease. Research is often slow, tedious work whereby we grope for new and better methods and treatments. It is costly because we must have our best men and best equipment engaged in the work. It is more costly, however, if we do not find the methods by which infectious diseases may be prevented, controlled, or eradicated. I think that all who are familiar with the problems will freely admit that the Federal Government and the states are investing an inadequate amount in research for the protection of the future of our livestock and poultry.

Hog cholera occurred on only 263 premises during the year, which compares favorably with an average of 445 outbreaks reported during the past 20 years. The Maryland method of controlling hog cholera through the employment of sanitary practices and good management is so well known that it hardly needs repetition here. Another infection, swine erysipelas, seems to be slowly spreading in the State. It occurred on 30 premises in seven counties. A year ago we had found it in only three counties. It has not reached alarming proportions, but it has caused serious loss on the premises where it occurred. During the winter months, in particular, we find that a large number of growing pigs are given an insufficient amount of minerals in their diet, which results in malformation of the bones. This is a condition that is easily prevented by the feeder, and very difficult to correct when the damage has occurred.

The late Dr. Maurice Hall, Chief of the Zoological Division of the National Institute of Health, estimated that Maryland farmers are losing two to four per cent of the value of their stock each year because of intestinal parasites. There are no accurate figures on this subject, but autopsy records and the findings of our diagnostic laboratory would indicate that Dr. Hall's figures are well within reason. Drugs for the elimination of parasites in the intestinal tract are helpful but not highly effective. Prevention of infestation by keeping hogs out of worm-egg laden lots is the best treatment. This is equally true in the care of colts, lambs and other domestic stock. Prevention of parasites is largely a farm management problem, but when infestation has occurred, a competent veterinarian should be called. Drugs that are strong enough to kill live, wiggling worms in the intestinal tract are sufficiently toxic to kill or damage the tissues of the host when improperly used.


MARYLAND LIVE STOCK SANITARY SERVICE
RECORD OF MAJOR PROJECTS
1930-1939
NUMBER OF DIAGNOSES
450,000
425,000
400,000
375,000
350,000
325,000
300,000
275,000
250,000
225,000
200,000
175,000
150,000
125,000
100,000
75,000
50,000
25,000
1,000
1930-31
1931-32
1932-33
1933-34
1934-35
1935-36
1936-37
1937-38
1938-39
BANGS DISEASE
PULLORUM DISEASE
TOTAL LABORATORY DIAGNOSES

I had distributed two weeks ago a summary of the herds and cattle in Maryland under test for Bang's Disease. I will not take your time to discuss this, other than to say that the work is progressing as rapidly as the economic conditions of the owners permit. I would, however, call your attention to the graph illustrating the increase in laboratory work during the 1930-1939 period. There has been a very marked increase in the work of the laboratories since 1935. During the last five years laboratories have been established at Salisbury, Centerville and Baltimore to supplement the work conducted at College Park. It is evident that when our stockmen, poultrymen, veterinarians, and others have facilities available for a quick, accurate diagnosis, they make good use of them. With many diseases, a delay of 24 to 48 hours in starting treatment proves most costly. It is often difficult, if not impossible, even on autopsy, to determine a specific disease without the aid of laboratory facilities and an accurate diagnosis must be made before intelligent treatment can be instituted. The laboratories, therefore, are merely an additional aid that the State, through the Maryland Livestock Sanitary Service, is extending to the people in reducing the losses from disease. The greatest help we receive, however, is the fine cooperation that we have always had from the stockmen and breeders.

I want to express my sincere appreciation, and that of my co-workers, for the confidence you have placed in us and the help you have given us in the solution of our mutual problems.

MR. BAILEY: Mr. Mylo S. Downey, Ass't. State 4-H Club leader, will now present the 4-H Club boys who have won such high honors for our State.

MR. DOWNEY: Due to weather conditions we do not have a very large representation of 4-H Club boys with us tonight. I would like to introduce to you at this time Mr. Charles Rathell of Talbot County. Mr. Rathell was the winner of the Wilson Trip to Chicago in 1939. Another outstanding Club Member in our presence this evening is Mr. Emanuel Walter of Montgomery County. Mr. Walter won a trip to Chicago for his leadership and ability. We hope that the weather will be more favorable next year so that we will have a larger number of Club boys with us.

MR. BAILEY: Our concluding speaker for this evening is Mr. John W. Magruder, Extension Agronomist of the University of Maryland Extension Service. Mr. Magruder will tell us about some of the problems in making hay.

PROBLEMS IN MAKING HAY

JOHN W. MAGRUDER

Next to pasture, hay is the most neglected feed crop grown in Maryland. It is the usual custom to make hay after the other late spring and early summer work is finished. Of all of the feed crops, this is the one that needs first attention if quality hay is to be produced.

In Maryland, nutrients can be produced 40 per cent cheaper in hay than in corn. Hay cannot be used very extensively in feeding certain classes of livestock, but the cost of feeding a number of animals on every livestock farm could be greatly lowered by feeding more hay.

How can one get livestock to eat more hay, thus reducing the amount of grain to be fed? First, animals will consume approximately 40 per cent more good hay than poor. Second, the nutrients in each pound of good hay consumed is higher than in poor hay. As an illustration, U. S. No. 1 alfalfa hay contains approximately 24 per cent more total proteins, 40 per cent more fat, 10 per cent more minerals and 7 per cent more total digestible nutrients than U. S. No. 3 alfalfa hay. In addition, the No. 1 hay is much more palatable and higher in vitamin content, particularly vitamin A. Similar differences in feeding value are found in other kinds of hay.

In view of these facts one can see the importance of growing hay of high quality. With the increased emphasis by the various Federal Agencies encouraging the production of more hay and pasture to conserve the soil, it becomes increasingly important that hay and pasture of high quality be produced; otherwise, more grain or soil depleting crops, rather than less, will be needed to supplement the lower quality forages.

Lime Requirements

One of the first requirements in producing good hay is to have the soil sufficiently well limed to grow the desirable legume hay plants. There are only two desirable legume hay plants of any importance grown in Maryland that will tolerate much acidity. Higher yields of better quality hay are produced from them when the soil is nearly neutral. These two plants are soybeans and lespedeza.

If the soil is too acid to grow red clover successfully, usually 2,000 pounds or more of ground limestone, or its equivalent in other forms of lime, should be applied before planting this crop. Usually about twice as much as is needed for red clover should be applied for alfalfa and sweet clover. The exact amount of lime to supply depends, in addition to the kind of hay to be grown, upon the texture of the soil, the organic matter content and the degree of acidity. This can best be determined by a soil test.

Fertility Requirements

The fertility of the soil is another factor that affects quality in hay as well as yield. Legume plants in general use much phosphorus, potash and nitrogen. Usually the phosphorus and potash can be maintained in the soil by an application of 500 to 600 pounds of fertilizer in the rotation, along with the manure produced on the farm. Under normal conditions a fertilizer analyzing 2-12-6 is satisfactory.

It is suggested that 200 pounds be applied in the hill or row to the corn crop and 300 to 400 pounds to the small grain. There is usually sufficient residue left for the hay crop.

The manure can probably best be applied on the hay land after hay harvest before the field is plowed for corn.

Where alfalfa hay is grown, a top dressing during the fall or winter with 5 to 8 tons of manure reinforced with 40 pounds of 20 per cent superphosphate or 0-14-6 fertilizer will be very helpful.

When sufficient lime, phosphorus and potash are added and there is plenty of organic matter in the soil the legumes in the hay will store enough nitrogen for successful production.

Plant Sufficient Seed

Quality hay cannot be produced unless sufficient seed of the desirable kind is planted. A hay field that is acid, low in fertility or that has not been properly planted, will have many volunteer weeds growing in it. The weeds naturally lower the quality of the hay. The largest acreage of hay in Maryland is planted to red clover and timothy. A mixture of 100 pounds per acre of medium red clover and 8 pounds of timothy is suggested. On farms where the elevation is less than 650 feet, 5 pounds of Korean lespedeza might well be added to the mixture, not so much for hay, but for mid-summer pasture and to aid in avoiding the risk of failure in adverse seasons.

A good mixture on well limed, fertile, well drained soils is alfalfa, 12 pounds per acre, alsike clover, 4 pounds and timothy 4 to 6 pounds.

Cut Hay Early

The quality of hay cut late will be low regardless of the weather. The time of cutting is under the control of the farmer and in general, he should so plan his operations to cut the hay at the right stage.

The protein content of young growing plants is high and the fibre low until the plants start to bloom. From then on there is a rapid decline in the per cent of protein and an increase in the fibre or woody content of the hay. The great increase in total nutrients is made between early bloom and full bloom. Thus, the hay should be cut early enough to contain the maximum protein with the minimum fibre and late enough not to sacrifice yield of total nutrients.

For most plants this stage is between early and full bloom. Soybeans are an exception to this in that they continue to grow while the seeds are developing. They may best be cut when the seeds are one-half to two-thirds developed. One cutting of alfalfa should be permitted to come in full bloom in order to protect the roots of the plants over winter. The other cuttings may be made at one-tenth to one-fourth bloom.

Speed is the Watchword

Preparation for handling the crop is absolutely essential if good hay is to be made. The old saying, "Make hay while the sun shines," is very

appropriate. One of the handicaps on many farms is insufficient mowing machinery to cut the hay quickly. On practically every farm in Maryland having 30 acres of small grain or more the operator has a binder that probably cost $250.00 when new. The binder is frequently used only two or three days a year. There is usually a similar acreage of hay on the farm, if not more, and frequently the hay field must be cut two, and possibly three times a year, particularly if it is alfalfa. The curing of this hay in good condition is dependent upon its being handled when weather conditions are favorable. It is a common experience on many farms for only one hay mower to do this job, resulting in much delay in cutting and thus running the risk of weather damage, as well as delayed harvesting.

The side delivery rake is a very important machine in making hay. It permits the handling of hay rapidly with the minimum of labor and at the same time it is not as likely to knock off the leaves. Unlike the dump rake, it lifts all the hay from the ground so the air can pass through it readily while it is protected in windrows from the sunlight and dew. The desirable size of windrow for proper curing can be more easily made with the side delivery rake and should the hay become wet by rain it can be turned in the windrows with but little handling.

In curing hay it is well to rake it in windrows before nightfall, if it has wilted sufficiently, to avoid the loss of green color, and consequently, vitamin A, as a result of the action of dew on the wilted plants.

Hay must be well cured, below 30 per cent moisture, before it can safely be stored. Experience is essential in determining this condition. Some danger from spoilage and spontaneous combustion can be avoided when hay is stored slightly green if each forkful of hay is spread out over the mow rather than allowed to remain in a compact mass as it falls from the hay fork.

The sprinkling of salt on hay as it is stored does not aid in curing nor will it prevent spontaneous combustion when hay high in moisture is stored. About the only purpose it serves is to season the hay and make it a little more palatable. More than 10 to 20 pounds of salt per ton of hay may be excessive for livestock feeding.

Hay Curing Research Needed

I do not know of any research on the production and curing of feed crops in greater need than that of finding a practical, economical way of curing hay to avoid weather damage.

Making the hay crop into grass and legume silage may be resorted to during adverse seasons, but it is doubtful whether it is advisable to replace hay entirely with silage. Animals crave some dry feed and there is the extra expense of hauling the excess waste in silage and in addition there is a loss of vitamin D.

The Tennessee Valley Authority has ben conducting some research in cooperation with the Tennessee Agricultural Experiment Station to

determine a method of partly drying hay in the field and completing the drying in the barn. Air ducts are constructed in the barn through which natural air is blown intermittently to complete the curing of the hay. This method of curing shows some promise of success and may be found to be suitable for Maryland conditions. The high humidity along the Atlantic Seaboard is a factor that needs to be considered. The cost of installation is only about one-tenth that of the large hay driers. Those interested in this research may secure a bulletin on the subject by writing the University of Tennessee, Knoxville, Tennessee, Bulletin No. 170.

MR. BAILEY: This concludes the Eleventh Annual Meeting of our Association. On behalf of the Association, I should like to express my appreciation to those who have helped make this meeting a success. We hope that you will all be with us for our Twelfth Annual Meeting, and that you may enjoy 1940 and its bright prospects.

REPORT

OF THE

ANNUAL MEETING

OF THE

The Maryland Tobacco Growers' Association

January 10, 1940

The annual meeting of the Maryland Tobacco Growers' Association, held in the ballroom of the Lord Baltimore Hotel, Wednesday, January 10, 1940, was the largest gathering of tobacco farmers ever to attend the annual affair.

Honorable Thomas Parran, president of the Maryland Tobacco Growers' Association, presided. The first speaker introduced was Dr. T. B. Symons, Director of the Extension Service, University of Maryland. He outlined the growth of cigarette consumption and compared this growth with present production of Maryland tobacco, which has not increased during the past ten years. He advised the growers to determine ways and means whereby they would use and protect their valuable franchise, namely, the State Tobacco Warehouse, and assured them that only through their organized effort could they hope to obtain success.

George I. Gardiner, salesman for the Maryland Tobacco Growers' Association, presented the sales problems of tobacco growers. He reviewed the tobacco markets of Maryland and the South and conditions affecting them, and presented comparative figures on the average prices received by the Baltimore market and the loose leaf markets during 1939.

"Existing marketing conditions of our Southern growers have reduced the farmer of that section to the status of a pauper," Mr. Gardiner stated, "and I warn you that any change in the marketing of our Southern Maryland crop will bring like results to our farmers."

The meeting was also addressed by Master C. C. Buckler, Jr., 4-H Club representative from Calvert County, who thanked the members of the Association for its financial assistance in furthering the work of 4-H Club members.

Dr. E. A. Walker, Tobacco Disease Specialist of the University of Maryland, advised the growers that the services of his department were

available to all desiring assistance in preventing the diseases prevalent in tobacco beds. Anyone desiring Dr. Walker's help on their plant bed problems can communicate with him at the University.

The annual statement and standing of the Association as of January 1, 1940, was read by Mr. Sachse, manager, which showed a surplus in the Association in excess of $270,000, after taking into consideration reserves, taxes, and all expenses.

Mr. Sachse stated that the Association was contemplating the issuance of certificates to tobacco shippers, which would classify their ownership in the Association's earnings. He felt that within the next four or five years the Association would be in position to pay off such certificates each year. The details pertaining to this will be worked out and the membership will then be more specifically acquainted with this arrangement.

It was pointed out further by Mr. Sachse that the Maryland tobacco farmer has been receiving parity price for his tobacco, but he also pointed out that the prices received put the farmer 25 years behind in his standard of living, as parity prices did not make it possible for the growers to progress with the times. Tobacco growers in other areas were even behind the Maryland farmer, but it is self-evident that something will have to be done regarding such unfavorable conditions.

The farmer, as an individual, has tried for years to better his situation but has been unsuccessful, and a new era for farming will have to take place and the farmer must be properly represented through organization. Everyone in the industry, from the manufacturer to the retailer of cigarettes, has kept his earnings up to present day conditions, but to do this, the tobacco producer had to stand the brunt of labor costs and taxation.

Fifth Annual Summer Meeting

of the

MARYLAND STATE POULTRY COUNCIL

July 26, 1939

University of Maryland
College Park, Md.

The Fifth Annual Summer Meeting was held at the University in connection with Poultry Day, which was featured by dedication of the new Poultry Building and Poultry Plant and the visit of foreign delegates to the World's Poultry Congress.

The forenoon session was devoted to dedication ceremonies in which Governor Herbert R. O'Conor and a number of world authorities on poultry subjects participated. Approximately 125 delegates from 39 foreign countries were present.

Maryland Poultry Day is significant of the constructive efforts of the poultrymen of the State through their organization, the response of the University to their needs, and the progress that is being made through the close cooperation of all interested.

A program arranged by the Maryland State Poultry Council was carried out at the afternoon session, at which the following addresses were given.

POULTRY RESEARCH AND EXTENSION PROGRAM FOR MARYLAND

By MORLEY A. JULL, University of Maryland.

Fundamentally, progress in poultry production depends upon the results of research. This same principle applies in the various industries as well as in other branches of agriculture. The paramount need of the Maryland poultry industry is a well-developed poultry research plant at the University of Maryland, a well-organized research program, well-balanced courses of instruction, and an adequate extension program to carry the results of research to the producers.

In order to determine the more apparent needs of the industry from the standpoint of future research, the poultry staff of the University have estimated the annual losses suffered by the producers in Maryland's

second most important agricultural industry. The following items of losses could be reduced very materially if the University were better equipped to provide producers with the practical information which they so urgently need in order to make poultry production and marketing more profitable, and to improve conditions in the industry. The estimated losses are annual losses.

1.	Losses in depreciated value of market eggs	$ 420,000.00
2.	Losses due to low hatchability of eggs incubated	125,000.00
3.	Losses due to chicken mortality to 12 weeks	214,200.00
4.	Losses due to growing and laying stock mortality	731,800.00
5.	Losses due to low hatchability of turkey eggs	57,500.00
6.	Losses due to turkey mortality	146,800.00
7.	Losses due to depreciated value of market poultry	525,000.00
	Total annual losses	$2,220,300.00

In addition to these actual losses which the industry sustains, there should also be taken into consideration the many thousands of dollars sent outside of the State every year for hatching eggs, baby chicks, and breeding stock, all of which should be produced in Maryland. Considerable quantities of market eggs and dressed poultry are also secured from other states, but these "importations" are offset to a considerable extent by the market eggs and poultry shipped from Maryland to outside markets. Another great economic handicap in the poultry industry arises from the shipping of live poultry to consuming centers, involving as it does paying freight and express on heads and feet and offal and the costs of shipping coops. If most or all poultry could be shipped dressed instead of alive, many thousands of dollars would be saved every year.

These staggering losses are for the most part avoidable, and if research conducted by the University would lessen the losses that producers suffer by as much as 25 per cent it would mean a saving of over $550,000 to Maryland poultry producers annually. Over a ten-year period this would mean a saving of over $5,500,000. A well-equipped research plant on a modest scale would constitute the best kind of an investment which the University could make on behalf of the poultry industry.

Research

An educational institution acquires a reputation largely by the quality of its research and by the calibre of its graduates, whose qualifications are determined largely by the facilities available for conducting research and by the character of the teaching staff. Every effort is being made to correlate the existing functions at the University in a well-organized poultry research program. The Poultry Department cooperates with such departments as Chemistry, Agricultural Economics, Engineering, Animal Pathology and Bacteriology and Home Economics.

The poultry research program is organized on the basis of the following four major lines of work:

1. Breeding Methods
2. Feeding Methods
3. Marketing Methods
4. Disease Control

In addition to these four major lines of work there are numerous other problems, such as incubation, brooding and housing, that should receive due consideration if a well-rounded-out program is to be developed.

Inasmuch as most of the breeding, feeding and marketing problems with which the poultry industry is faced are of a physiological nature, we have engaged the services of a well-qualified physiologist to have immediate charge of many of the research activities. The services of a thoroughly experienced poultry marketing specialist and a well trained poultry nutrition specialist have also been engaged. Many of the factors affecting the quality of eggs and poultry meat are physiological factors. Moreover, during recent years consumers have become much more "quality conscious" concerning the foods they purchase. Also, recent trends in the production of agricultural commodities have demonstrated most emphatically that farmers must produce high quality products as efficiently as possible or go out of business. Our Maryland egg and poultry producers come into direct competition with poultry producers in the Northeast, the Middle West and on the Pacific Coast. There is every reason in the world why they should be able to compete successfully and they will be able to do so if we develop a good production and marketing research program at the University.

There are two unique features pertaining to the development of a well balanced poultry program at the University.

In the first place, the University of Maryland is one of the few universities in the country having the State Board of Agriculture closely affiliated with the activities of the College of Agriculture. That should provide for the possibility of developing a strong marketing research program intimately correlated with research on production problems. We have developed strong undergraduate and postgraduate courses in marketing poultry products.

In the second place, the University is fortunate in being located near Washington and Beltsville. Since a considerable number of research men are engaged in poultry problems at both of these places, it is possible to arrange for postgraduate courses for them at the University.

A strong teaching course developed for postgraduate and undergraduate students should be the means of attracting students from nearby and distant states where no postgraduate work is available. Thus, Maryland has the opportunity of assuming the leadership in developing postgraduate work in this section of the country.

Extension

Very good extension work is under way and numerous extension projects are receiving the fullest possible consideration in relation to the importance of the poultry industry in our State.

The provisions of the Maryland Poultry Improvement Plan are being carried on by more flock owners and hatchery operators than ever.

The farm egg record project is in its tenth year of operation and has rendered valuable service to producers by impressing upon them the fundamental economic principles involved in successful flock management.

We endeavor to cooperate as effectively as possible with the state poultry organizations, including the State Poultry Council, the State Turkey Producers' Association, and the State Hatchery Association.

We are anxious to be of the greatest possible service to the poultry industry of the State in order that producers may make a better living.

HOW RESEARCH BENEFITS THE INDUSTRY

By T. C. BYERLY, University of Maryland

The research program at the Maryland Agricultural Experiment Station is organized to assist every branch of the poultry industry of the state.

Every year in Maryland over 2,500,000 chickens die from disease, bad heredity, malnutrition or mismanagement. Breeding for resistance to disease is a research project of major importance.

Maryland broiler producers now spend more than $300,000 annually for chicks purchased outside the state. Maryland hatcherymen can capture most of this business by producing better broiler chicks. Research on this problem is planned.

Progeny tests of Black and Bronze strains of turkeys in purebred and crossbred matings are being conducted in order to produce more viable strains of rapidly maturing, efficient turkeys with good market quality.

Research to develop improved methods of identifying and maintaining quality in eggs and poultry meat is being conducted. Methods are sought which will enable the poultryman to take full advantage of Maryland markets and to assure Maryland distributors and housewives an adequate supply of local products of the required quality. Special effort is being made to develop a candling measure of internal egg quality.

Studies of the physiology of egg production, especially of the effects of artificial lighting on molt, broodiness, fertility and hatchability are being conducted in order to enable the poultryman to maintain a more uniform supply of eggs and poultry meat throughout the year.

Inherited factors affecting egg production are known to produce their effects through the glands of internal secretion such as the pitui-

tary, ovary, oviduct and testis. Environmental factors, particularly the period of illumination, also affect these organs and thus determine what proportion of her genetic capacity for egg production a hen achieves. Research will be undertaken to study the effects of light and other environmental factors on the glands of internal secretion.

Studies of the nutritional requirements of poultry are centered on reducing the cost of the poultry diet by the maximum use of home-grown grains and the proper supplementing of inexpensive feeds to make them nutritionally adequate and efficient. Feed cost comprises over half the total costs of poultry production. Any information which will enable producers to reduce feed costs will be directly reflected in increased profits.

HOW THE MARYLAND FRESH EGG LAW WILL BE ADMINISTERED

LAWRENCE E. DOWNEY
Maryland State Department of Markets

What is a fresh egg? That is an old and much debated question. However, I think we will all agree that all eggs worthy of being called fresh must have certain characteristics when candled. First, the shell should be sound and clean, the white clear and firm enough to hold the yolk well placed in the center of the egg when it is twirled before the candle. The yolk should be sound, well rounded, and free from apparent blemishes.

These characteristics have been embodied in the Maryland Fresh Egg Law, which states that it is unlawful to advertise, or in any way offer for sale, any eggs as being fresh unless they possess these qualities.

There are two types of fresh egg laws, one in which all eggs are required to be sold on a graded basis and names those grades which may be sold as fresh. This type can best be called a grades law.

The second type identifies a fresh egg by certain candling characteristics and makes it unlawful to sell any eggs as fresh that do not meet these standards or better. Maryland's law obviously belongs in this class.

This law has been on the statute books for several years, but this fall will be the first time that any attempt has been made to enforce it.

The enforcing agency, the Department of Markets of the Extension Service of the University of Maryland, realizes that this law can be a detriment or an advantage to the egg marketing problem of the state.

We feel that the fresh egg law is a consumer's law as well as a producer's law, both sharing alike in its benefits. When the housewife purchases fresh eggs, she must find them entirely satisfactory when she gets them home regardless of the season of the year.

The Fresh Egg Law should make it no longer necessary for the producer, wholesaler, or retailer who is making a conscientious effort

to produce, handle and merchandise high quality eggs to compete with the unscrupulous merchant who is offering any and all eggs as fresh at a much lower price than the market at that time indicates.

To accomplish these goals a definite educational program must be carried out. Each person who has an interest in the marketing of eggs in this state should be educated to the fact that there are *fresh* eggs, *eggs* and *cold storage* eggs. No longer can all eggs that have been in cold storage less than thirty days be termed "fresh." That definition can be applied only to those eggs that have had the proper care from nest to the market basket. The producer, wholesaler and retailer each has a definite responsibility in this care. The first should see that eggs are collected promptly from the nests and allowed to cool thoroughly before being packed in the cases. The wholesaler should provide a clean, cool and well ventilated storage for his eggs. He should also make smaller and more frequent deliveries to his retail customers. The retail merchant should follow through this program of keeping the eggs cool and give up his old practice of keeping a case of eggs on the store floor in high temperature until sold.

The producer, the wholesaler, and retailer must be shown that the Fresh Egg Law is to help, not act as a stumbling block.

One of the greatest dangers of such a law is that it may drive fresh eggs from the retail market.

The first thing that so many of us do when faced with a new law is to figure out a way to evade it rather than to work out a program of compliance.

If an egg handler decides to evade this law, the first solution to offer itself would be to discontinue advertising any eggs as fresh and merely sell just *eggs*.

However, I believe this situation can be avoided. First, we will put on an advertising campaign and make the consumers fresh egg conscious. Then they will demand eggs of high quality. Secondly, we must approach the enforcement of the law with a helpful, rather than a militant, attitude.

Maryland is fortunate in that it is not pioneering in applying the Fresh Egg Law. We have had a chance to observe it in other states and will have an opportunity to follow the practices they found desirable and to profit by their mistakes. Personally, I am more familiar with the methods used in New Jersey, having spent some time there working under the late Mr. Jones in helping to enforce their Fresh Egg Law. We will draw on the experience gained there in setting up our own program.

By putting into practice the suggestions I have very briefly outlined and by using the enforcement authority only as a last resort on the few who flatly refuse to comply with the law, I am sure that everyone concerned will benefit by our new Fresh Egg Law.

RESPONSIBILITY OF THE MARYLAND HATCHERYMAN IN PRODUCING PULLORUM CLEAN CHICKS

LETCHER L. COLONA, Pocomoke City, Md.

As a Maryland poultry breeder, I feel it my responsibility to cooperate to the fullest extent with the hatcherymen in the production of pullorum clean chicks. As poultrymen we should take enough interest and pride in our flocks to meet our own blood testing costs. All of us should cooperate in this work, so that it will enable us to demand a premium for our eggs. The hatcheryman, on the other hand, should cooperate by paying us a premium for eggs from pullorum tested flocks.

Every breeding farm in the State of Maryland should have at least a pullorum tested flock. Such flocks are those tested under the supervision of State agencies.

I believe all flocks containing 3% or more reactors should be again tested in 30 days. All eggs, where chicks are to be kept for replacement stock, must be clean.

We all know that Maryland has the lowest number of birds tested as a percentage of adult bird population and the highest percentage of reactors to the pullorum test compared with states of New Hampshire, Connecticut, Massachusetts, New Jersey, Virginia, Pennsylvania, and Delaware. For instance, New Hampshire alone, out of 700,000 birds tested, had .2%, where Maryland had 300,000 tested and had 7.2% reactors.

We, as Maryland poultrymen and hatcherymen, should be ashamed of such a report and awakened to the fact that we can and will produce as good chicks as can be bought anywhere if we will only put forth some effort and a little money. The industry as a whole in the state, loses much more in dollars and cents in not doing this work than it would cost to do it.

The hatcheryman should make a closer check on the flocks and when the producer is not living up to his part, discontinue taking his eggs. On the other hand, with the poultryman who does meet the requirements in producing eggs from a U. S. Pullorum passed or Pullorum clean flock, a premium should be paid him for this product. I can cite an illustration of 36c being paid a Maryland breeder, when New England breeders are getting 57c per dozen from the same hatcheryman. This situation must be changed if Maryland hatcherymen are to do their fair share in the improvement program.

Maryland hatcherymen are paying the New England breeders thousands and probably hundreds of thousands of dollars every year that should be spent in our own territory and there is no doubt but what we can produce just as good eggs as the New England breeder if we will only do it.

Future progress of the poultry industry will depend on the interest of poultry breeders and hatcherymen in this program. The chicken of today presents great possibilities, and upon the cooperation of the poultrymen and hatcherymen rests the responsibility for the solution of this problem.

VALUE OF REPEATED TESTING FOR PULLORUM DISEASE

C. R. HOLLAND, Frederick, Md.

I understand my part on this program is to present to you people the figures and results of the Maryland Chick Hatchery's work on blood testing, since we began our testing work.

We did our first blood testing in the fall of 1932. I am sorry to state that I do not have records, on the results of that year's work.

I do have here the records of our testing for the fall of 1933, in preparation for our 1934 season. We tested a total of 6,196 birds. We had 478 reactors in the 6,196 birds, which was roughly 7.7% reaction. I don't know how this percentage looks to most of you, but it certainly looks high to me, in comparing it with our recent years' reports. If our tests had been this high the past two years, I rather expect that we would be out of business today.

In the fall of 1934, we used the stained antigen method. This is the only time that we have ever used the plate method. We did not keep any record of our reaction that fall.

In the spring of that season (1935), we received quite a number of complaints from our customers, because of white diarrhea. In order to try and check this trouble, we decided to retest all our N. H. and R. I. Reds. We tested 2,702 birds, had 136 reactors, which was about 5%. We found that most all of our trouble was coming from these breeds.

I have here all the figures, on our testing work, beginning in the fall, 1935, to and including 1939. In the fall of 1935, for our 1936 season, 9,975 birds. There were 634 reactors, which made our percentage of reaction roughly 6.3%. This percentage is still quite high.

Then, in February, I decided to retest all of our flocks that had a reaction of more than 10% in the fall. I did not want to have the trouble that we had the previous year. We retested 2,083 birds and found 68 reactors. This brought our percentage of reaction on this test down to 3.3%, which is considerably lower, as these flocks were all over 10% in the fall.

I then decided to retest the flocks that we intended using eggs from through the summer. We tested 3,194 birds and had 48 reactors, which made our percentage of reaction on this test 1.5%.

Getting into our 1937 season, we tested in the fall of 1936, 11,016 birds. There were 445 reactors. This gave us a reaction of 4.5%, which is about 2% lower than the previous fall.

In February of that season (1937), I decided to put our blood testing on a definite basis. I decided to retest all of our breeding flocks, regardless of what the reaction was on any flock tested in the fall.

We tested 8,383 birds and we found 78 reactors, which made our percentage a fraction higher than .9 of 1%. I might add that this is the year that we noted a big improvement in the quality of our chicks.

On our summer test we followed the same program as in 1936. We retested all flocks that we intended to use eggs from through the

summer. We tested 3,526 birds, had 59 reactors. The percentage of reactors on this test was 1.7%.

In the fall of 1937 we tested 11,322 birds for our 1938 season. We found 182 reactors, which was considerably lower than any previous fall test. Our percentage of reaction was 1.6%.

In February, we retested all of our flocks again. We tested 7,962 birds and found 41 reactors. This made our percentage of reaction on this test about .5%.

In the summer 1938 (last year) I decided not to retest the flocks that had been clean in February, so we retested all flocks that had reactors in February. We tested 1,195 birds, found 30 reactors, which made our percentage about 2.5%.

Last fall we tested 10,480 birds. We found 112 reactors, which brought our fall test down to 1.1%. This was the lowest fall test we have had. Whether we will be able to lower this percentage on our fall tests in the future I don't know, but we sure intend to try to lower it.

In our February tests of this year, we retested 8,559 birds. We found 34 reactors, which was .4 of 1%. This is the lowest percentage of reaction we have ever had.

I might add that we had 23 clean flocks in our fall test out of 48 flocks and 29 clean flocks in our February test.

Well, that is quite a lot of blood testing. It meant a lot of work, besides the added expense. We did not do this work just to do blood testing. We did it to help improve our chicks and it certainly has brought us results.

Mr. Rice has informed me that the state has made available a special sum of money to promote retesting work. I don't know how many intend to use their portion of that money, but I am sure that we will use our share.

Summary of Pullorum Testing Work

Maryland Chick Hatchery, Frederick, Md.

		Birds Tested	*Reactors*	*%*
1934	Fall 1933	6,196	478	7.7
1935	Sum. 1935	2,702	136	5.
1936	Fall 1935	9,975	634	6.3
1936	Feb. 1936	2,083	68	3.3
1936	Sum. 1936	3,194	48	1.5
1937	Fall 1936	11,016	445	4.5
1937	Feb. 1937	8,383	78	.9
1937	Sum. 1937	3,526	59	1.7
1938	Fall 1937	11,324	182	1.6
1938	Feb. 1938	7,962	41	.5
1938	Sum. 1938	1,195	30	2.5
1939	Fall 1938	10,480	112	1.1
1939	Feb. 1939	8,559	34	.4

Sixth Annual Winter Meeting

OF THE

Maryland State Poultry Council

January 10, 1940

Lord Baltimore Hotel

Baltimore, Maryland

HARRY H. RIECK, Preston, Md., *President*, Presiding

MY EXPERIENCES IN MARKETING SHO'NUFF GENUINE MARYLAND TURKEYS

ARTHUR W. NELSON, Monkton, Md.

The purpose of the Maryland Turkey Producers' Association is to develop better markets for the higher quality turkeys produced by Maryland growers.

The marketing plan developed by the association is quite simple to carry out, but means a lot to members who use it to help market their birds.

Under the plan, the producer makes his own contacts with dealers, but has the advantage of State-wide publicity carried on by the association. The association further assists the producer by providing him

with posters, window streamers and other sales material which he in turn gives to the dealer for display purposes.

Turkeys marketed under the plan are graded according to quality and inspected by an official state inspector who certifies those that pass with a label placing them in the "SHO'NUFF" Genuine Maryland Grade. A practical inspection service suitable to producers has been devised.

Membership in the association is limited to bona fide Maryland turkey producers. Just prior to the holiday marketing season they attend selecting, killing, dressing, and grading demonstrations. This helps them to further improve quality and thus enables the association to develop wider and better markets for "The Cream of The Nation's Turkey Crop" the "SHO'NUFF" Genuine Maryland turkey.

Because of the special management and feeding used in producing "SHO'NUFF" Genuine Maryland Turkeys, they are especially young, tender and juicy. They have a delicate, tasty flavor which is retained by their having been freshly killed and chilled, but never frozen or held in cold storage.

I had the first turkeys inspected under the "SHO'NUFF" Genuine Maryland tag, December, 1938. Mr. Martin, the inspector, Mr. Gwin, the secretary were present for the inspection at the store of Green and Fairbanks in Baltimore. The weights were from 10-13 lbs. and were Bourbon Reds.

At Christmas a store that sells a better grade of meat and poultry ordered 15 "SHO'NUFF" Genuine Maryland tagged turkeys, weighing from 12 to 16 lbs. When the order was delivered, he called for 50 more, but I could not take the order as I was booked up.

The grocer said at the Producers' Association meeting in Annapolis, in November that he had the tagged turkeys in the store ten minutes and they were sold, and had a hundred other turkeys of a good grade at the same time and selling at a cheaper price.

The prices of "SHO'NUFF" Genuine Maryland turkeys in 1939 were hens, 33c, Toms, 30c, wholesale; retail hens 38c and Toms 35c a pound. Prices for 1939 Thanksgiving and Christmas; hens 32c, Toms 28c, wholesale; retail, hens 37c and Toms 32c, out of state 2½c above best northwestern price.

The directors of the association set the price. This year for Thanksgiving the price was about right, but the Christmas price was out of line.

It was shown that a definite price cannot be set in advance and be expected to be correct all the time. The 1938 season was the exact opposite. The Christmas price went up above the one at Thanksgiving time and the producers felt that they were not receiving enough for their birds.

It has been suggested that the association select the top northwestern price and sell their birds at so many cents above their figure; that would allow the association price to fluctuate with the market.

Dressing

To have turkeys that are well matured, at least 24 to 28 weeks of age, and depending on the breed, so they will be free of their pin feathers, I select the turkeys to be dressed and do not feed for 12 hours before killing, but give them water.

Care has to be used in catching and handling so they will not be bruised. The bird is then hung by each foot. The first operation is to sever the large blood vessel that can be seen easily, just back of the roof of the mouth and next, after thirty seconds, force the killing knife back into the portion of the brain between the eye and ear. Then, pull out the large wing and tail feathers, then drop one leg and pluck the leg that is loose and continue removing body feathers on the side of the free leg. Then, fasten the plucked leg and drop the other and remove all feathers and pin feathers. The warm hands and fingers should be kept from the breast and other parts of the bird as much as possible, for the heat brings the blood to the surface and after cooling shows red spots. The dressed turkey should be cooled, but do not let freeze, because freezing makes water blisters on the skin when thawed.

The "SHO'NUFF" Genuine Maryland tagged turkeys are plucked dry, well-fleshed, with plump well-rounded breasts and thighs, bones well-padded with flesh, no prominent flesh bruises or skin abrasions and skin showing an absence of redding and free from blood clots in the mouth and throat. Clean head and feet shall include freedom from any foreign matter (such as dirt on feet). After plucking is complete, paper head wraps or bags should be applied to cover up the ugly head. Wipe free from blood before applying wraps or bags.

During the next Thanksgiving and Christmas seasons, "SHO'NUFF" Genuine Maryland Turkeys will be available at leading quality markets throughout the east. Consumers seeking these finer dressed turkeys should look for birds labeled with the yellow tag on which appears the "SHO'NUFF" Genuine Maryland Turkey trademark.

PROBLEMS IN THE PRODUCTION AND MARKETING OF QUALITY MARKET EGGS

WALTER A. SPEARIN, Salisbury, Md.

When I received a letter from Dr. Jull asking me to speak on "Problems in the Production and Marketing of Quality Market Eggs," the first thing that I thought of was, "How am I ever going to be able to speak for fifteen minutes on this subject when I can tell them all I know in about three minutes." However, when I began to think more about it, I realized it would be pretty hard to cover such a big subject in three minutes.

In discussing Problems in the Production and Marketing of Quality Market Eggs there are several angles or divisions which must be considered separately. These are—Breeding, Management and Marketing.

Let us just consider the importance of breeding or hereditary characteristics in relation to Quality Market Eggs. The following egg characteristics are definitely affected by breeding:

a. The shape of the egg.
b. The color of the egg.
c. The size of the egg.
d. The shell of the egg.
e. The thickness of the albumen.

There is no question among breeders and poultrymen today but that the shape, color, size and shell quality of an egg will be influenced by breeding. If we are to produce quality market eggs, the first thing that we must have is a bird capable of laying those quality eggs. It doesn't matter how well we care for the eggs, or the feed we use, if we haven't a bird with the ability to lay a quality egg under favorable conditions. As an example, one of the leading breeders in the United States has a strain of birds with marvelous egg-laying ability. They consistently win at the egg-laying contests and 300 egg birds are common. They also seem to have high vitality and livability. There is just one little catch, however, and that is, the great majority of these birds can't lay a quality egg. The shape of the eggs they lay is very poor, there are a lot of tints, the shell texture is weak. Why? Because this breeder bred for high egg production and egg size to the exclusion of everything else. He got the high production and egg size, but, after all, the average poultryman's finished product is an egg, and to obtain the maximum profits it must be a quality egg. This breeder many years ago probably had an outstanding "key" bird that produced a lot of eggs, but not quality eggs. He used this bird extensively in his foundation matings and the result has been that through the succeeding generations his birds have laid poor quality eggs.

I mentioned that breeding may affect the thickness of the albumen or egg white and that this thickness of the egg white will vary considerably among different birds. Kimber, out in California, has made an instrument that can measure the thickness of an egg white, and he has measured thousands of whites, trying to determine if some birds have a tendency to lay eggs with thicker whites than others. He seems to be convinced that to a certain extent egg white quality is inherited.

About twenty years ago egg laying contests were started in this country. I think either the first, or one of the first, was at Storrs, Conn. Each pen had 13 birds and the record on the ten high counted. No credit was given for egg size and quality. Some of the first 300 eggers laid very small eggs; in fact, the contestants soon discovered that in many cases the best producers were the birds that laid the smallest eggs. The natural tendency was for relatively small egg size to be associated with high egg production. Therefore, in order to encourage breeders to breed for larger eggs, the contests inaugurated the point system for scoring eggs. This has greatly increased egg size in this

country. In fact, I believe that today, on the average, birds in this country lay larger eggs than birds in any other country in the world. I would like to see the contests now penalize eggs of poor shape, shell-texture or tints, and I believe this would soon greatly improve the quality of our eggs.

To sum all this up we must have birds capable of laying a real quality egg and breeders and hatcherymen must take this factor into consideration.

The second step in the Production of Quality Market Eggs is Management.

I want to tell you just how we handle our eggs and birds on our poultry farm. There may be a lot better systems, but we have had very satisfactory results and have been able to produce premium eggs.

1. We use a nest eight feet long with one portion making two compartments 1'x4'. The birds enter these nests through a rear alley and eggs are collected by lowering hinged boards at the front. At each end of the rear passageway we have a small door so that at night as we feed grain we can close the nests and keep the birds from roosting in them. We like a nest compartment 4' long much better than single 1'x1' nests. With the small nests three or four birds all try to get in the same nest, which naturally causes a lot of soiled or broken eggs. Also, our nests are dark, which I think the birds prefer. When we want to clean out the nests, we can slip out the 8' section, take it outside and turn it bottom side upward, scrape it and it is clean. We use sugarcane litter in these nests, as it absorbs a lot of moisture and seems to keep the eggs cleaner than anything else we have tried. Shavings are also good but the birds seem to have a tendency to continually scratch them out of the nests. One foot of nest space is allowed for each four hens.

2. We follow a definite schedule in collecting the eggs and cleaning and packing them and we follow this schedule on Sundays and holidays as well. It is much easier to have a system than to let the eggs pile up at certain times. We collect the eggs three times a day, except in very hot weather, when we collect them four times. Our first collection is at 9:30, then 1 o'clock and then at 4 o'clock. Most of the eggs are laid during the morning. The eggs are collected in a wire basket. It is very necessary that eggs be collected three or four times daily, as the body heat of the hen is 108 degrees and it doesn't take very long for a temperature such as this to lower egg quality. At one time, we tried collecting the eggs in the morning and at night, omitting the noon collection. We soon had a noticeable drop in egg quality. We use electric weld wire on the roosts to keep the birds from droppings and we try to maintain dry litter conditions. Without wire over the roosts and damp floor litter conditions will cause many more dirty eggs. The layers are kept housed except during dry, warm weather. Naturally they don't get hold of any rape or wild onion, either of which will really do things to an egg.

The weather has a great effect on egg quality in spite of all we can do. During hot, dry spells the whites of the egg seem to be more watery, and, of course, just the opposite, fine, thick whites during cool, moist weather. The quality of eggs laid by birds running on range is not as good as those kept housed.

3. In our egg room we try to maintain a temperature between 40 and 60 degrees with a high relative humidity. Fertile eggs start to germinate at 69 degrees. We remove the cockerels from the breeding pens as soon as the hatching season is over, as it is pretty hard to produce a quality egg when it is fertile. It can be done all right as long as the temperature is down, but as soon as it gets above 69 degrees look out.

4. The eggs are collected and brought into the egg room where they are immediately graded into large, medium, etc. The soiled eggs are cleaned and all the eggs are placed in wire trays according to their grade. My wife has found it much easier to clean eggs when they are first collected and are still warm. These trays are then placed in an egg cooler, which is a cabinet frame covered with wet toweling. Under each tray we have a pan of water. With this method the eggs are rapidly cooled and the high humidity prevents any loss of moisture, so that the air cells remain small. In the Fall, Winter and Spring months, we are able to completely cool eggs in about four to five hours. In the summer, it requires several hours longer. As soon as the eggs are cooled they are packed in cases which shut them out from outside room air and help to preserve their fresh quality. They are shipped to New York City twice weekly. We have found that a great deal of care must be exercised when an electric fan is used to cool eggs. Unless the moisture in the room is very high a fan will tend to dry out the egg and increase the size of the air cell. We have also found that eggs do not cool satisfactorily when left in wire baskets. The outside eggs will cool fairly well, but the inside or center eggs do not seem to be cool quickly enough. When the eggs are removed from the baskets and placed in wire trays, the cool, moist air has a chance to strike them from each side and top and bottom.

In the egg cabinet or cooler where the temperature is between 40 and 55 degrees, the egg is completely surrounded by wet cloth and a water pan directly under it. Surrounded as it is by cool, very moist air it cannot help but cool rapidly with little or no loss of moisture. We do not feel that an electric fan is necessary under such conditions.

As to the grading of the eggs, we put eggs averaging 24 oz. and up to the dozen in the large class, eggs averaging 21 oz. to 24 oz. in the medium grade, and eggs below 21 oz. go either in the pullet or peewee grade. A good egg scale is a necessity. A cheap scale will soon get out of balance and give you incorrect weight.

The egg cases which we buy are once or twice used PEP cases which are obtained for us by our trucker in New York. It is necessary to discard about one-third of the flats and fillers as they are broken or

soiled. In order that fancy eggs look their best, they must be packed in clean, sound flats and fillers. We find it necessary to purchase several thousand new flats and fillers each year to take the place of the broken and soiled ones.

As to the birds themselves, we start them in 300 unit lots, and when they are ten weeks old, they are transferred to a grass range and open wire range shelters. Here they are divided into lots of 125 birds each. They usually develop into nice, big, heavy pullets. We do not house the birds until they reach 35% production. Most of you may shake your head at this, but we have done it for the past three years and have had very good results.

1. The birds are quieter.
2. When a bird is just starting to lay, her egg organs are undergoing considerable strain, and it seems to me a poor time to move her to an entirely new environment.
3. We have much less prolapse and picking.
4. This method allows us to hold our old hens that are laying for a longer period in the Fall, as we don't have to make room for the new pullets so early.

After the pullets are housed we keep oystershell and grit before them all of the time, and we feed them whole oats in the litter in the morning, and corn and wheat at night. Mash is kept before the birds in hoppers all of the time.

The laying mash has a direct bearing on the quality of the egg. Some mashes with more alfalfa produce a much darker-yolk egg than others. This is particularly true of a breeders' mash. Some feeds which contain poor ingredients and too much bran tend to produce a watery white. All in all, if you want to produce a fancy market egg you must feed a high-grade mash suited to the purpose. I would like to mention one thing about large egg size that every poultryman should stop and consider. It costs more to produce a large egg than to produce a small one. It requires more feed. Therefore, we should set some limit on this business of egg size, and not just keep on trying to breed for larger and larger eggs. The public will take all it can get, and, if we accustom them to 28, 30 and 32 oz. eggs, that's what they will demand. There has been a great deal of discussion regarding the sale of eggs by weight. I understand that at the present time the Vineland auction is considering this method. I would think that large eggs averaging about 26 oz. to the dozen is the limit of egg size we should strive for.

Marketing

The third angle in producing and marketing a quality egg is to be able to sell that egg at a premium price over other eggs. A poultryman is surely not going to extra trouble to produce quality, unless he gets paid for it. We ship our eggs to New York City to a receiver who is willing and ready to pay for egg quality. He really isn't interested in handling eggs unless they are fancy. He furnishes us with

very attractive labels which we paste on the edge of the cases. Using good cases with sound and clean flats and fillers, and set off by an attractive label, the eggs have the first essential to bring a higher price. That essential is an attractive package. This receiver sells the eggs to grocery and dairy stores that cater to a good trade. These retail merchants candle the eggs in the back of their store, and they will pay the most money and are anxious to get the poultryman's eggs that will candle out the most fancys. If you were buying eggs and could get 90% fancys from one poultryman and 60 or 70% from another, which eggs would you pay the most for? Also, remember these retail merchants, in order to sell eggs as fresh eggs in New York state, must meet definite requirements and specifications as to the quality of these eggs. They are liable to a fine if they misrepresent the quality of the eggs which they sell. This reminds me of one merchant my egg receiver told me about. This man, after removing the blood-spot eggs, sold them to the Chinese laundryman on the same block. It seems that the Chinese love 'blood-spot' eggs. Well, the State Inspector came around while a none too bright clerk was attending store. The Inspector went into the back of the store to see the eggs. After candling some of the eggs he asked where the blood-spot eggs were, and the clerk caught unawares, said "Oh, the boss sells them to a Chinaman down the Street." That cost the Boss a $100 fine.

When our eggs reach New York City, one local retailer who owns several stores, buys them without even opening them at the receivers'. He specifies he wants our eggs and has been buying them for years. He feels that the eggs are accurately graded and that the quality is good. In his words "he can get a lot of fancys per case."

There are a great many other methods of selling eggs besides shipping to an egg receiver in the big cities. Some poultrymen retail their eggs, some sell them on auction, some join egg clubs and sell through them, but everyone of these poultrymen will benefit by producing a top quality egg.

The egg auctions particularly—in New Jersey and Pennsylvania—have been very successful because a buyer can determine easily the weight and quality of the eggs he is buying. This gives him the confidence to pay a higher price. In the neighboring state of Delaware, we have the Diamond Egg Club which, although organized only several years ago has been very successful, and has a large membership. Its members agree to produce quality eggs by certain agreed methods, and to grade these eggs accurately. Certain specified egg receivers in turn agree to pay a premium price for these eggs. If a member does not abide by the rules, he is dropped from the club. The members of the three cents per dozen (according to the market) more than they were Diamond Egg Club will tell you today that they are getting two or several years ago. This amounts to 60c or 90c per case and is well worth while.

In trying times like we are experiencing at present, I think that poultrymen should cooperate with each other in every way to cut our production and transportation costs down. We should buy together, sell together and even own and control our means of transportation into the cities.

Here is an example of inefficiency and waste, which indirectly costs the poultrymen money. In our county there are three egg truckers hauling eggs to the city. They are always complaining about bad business, and I notice that about two-thirds of the year they only carry about half of load of eggs each to New York. In other words, we don't need three truckers, and if we had one or two trucks that went to the city loaded most of the year, the cost of shipping eggs could be reduced 10c to 15c per case. It might be wise for the poultrymen of our county and of other counties to form cooperatives or clubs and own their own trucks. The saving of 10c per case in shipping costs would amount to a saving of $50 to $150 a year for the average poultryman.

I should like to say a word about the consumer advertising campaign. I firmly believe that if we poultrymen are going to hold up or increase the consumption of eggs that we must advertise in various ways. We must keep the public informed as to the merits of our products. Not only must we produce a good egg, we also should advertise our product. It is a known fact that fruits and fruit juices, as well as commercial cereals, are displacing eggs on the American breakfast table. The reason that they are doing so is that people are told by radio, newspaper and magazine advertising, that if you eat light breakfast cereals and drink lots of fruit juice you will be "healthy, wealthy and wise." Are we as poultrymen just going to stand there and let them take away our market? The poultry business is a Billion Dollar industry. Anyone who went to the World's Poultry Congress Convention at Cleveland this summer, realizes this. At only a very small cost to each of us, we could soon have the public back eating more eggs. When we learn more about this consumer advertising campaign (a meeting is to be held in the Middle West this month) let's all get in back of it and put it over.

Our own Maryland Poultry Board has done some fine work in regards to better egg quality and in increasing the consumption of eggs. Right now in Baltimore, retail stores are competing with each other for a $100 prize offered for the best window display featuring "eggs." This Maryland Poultry Products Show is considered as one of the best egg shows in the country. I think our Maryland men have done a fine job to date, and I know they are going to continue with this work.

In closing let me say that egg quality and profitable marketing depends on these three things—

1. The breeding back of the birds.
2. The management of the birds and eggs on the farm.
3. Marketing quality eggs at a profit.

All three of these things are inter-dependent one on another.

THE ENFORCEMENT OF MARYLAND'S FRESH EGG LAW

J. W. SNODDY, Lanham, Md.

There are three distinct reasons why we need fresh egg law enforcement:

a. To help the producer
b. To protect the honest merchant
c. To enable the consumer to buy with confidence

The Producer

The latest reliable figures that I am able to obtain say that the State of Maryland produced in 1938, 28¼ million dozen eggs valued at $6,375,000. We imported 14,277,060 dozen, valued at approximately $3,180,000. Of the imports 62 per cent came by rail, 35 per cent by truck, and 3 per cent by boat. There is no possible way of knowing the number of eggs we export, as many producers ship directly to eastern markets and make no report. It is a reasonable supposition that more eggs are shipped out of the state than are imported. If that is true, and I believe it is, the Fresh Egg Law will greatly benefit the producers of Maryland in two ways.

First: It will help provide a home market for the producer of a quality egg. He will not have to ship his eggs out of the state. It will place the lower grades where they belong without designations that would injure sales.

Second: If the Fresh Egg Law is intelligently enforced it will act as a protective agency which will, or should, give the producer an opportunity of selling on a fair and competitive market. It will also control misrepresentations of "Fresh Eggs", thus increasing confidence on the part of the consumer in the grades, which should, in turn, tend to increase the consumption of eggs.

The Merchant

Wherever the fresh egg law has been wisely enforced there have been increased sales. Increased sales means more profits for the merchant. I believe it is because of lack of understanding on the part of some merchants that they oppose the law. They say it will work a hardship on them. Let us examine some of the facts and see if this is true. They say it will be too expensive to handle eggs under the law as they will be compelled to provide suitable refrigeration in order to prevent degrading while in stock, thus making them liable if they offer them for sale. That appears logical, but let's take a look: Meats, dairy products and most vegetables are perishable. Does the merchant claim that it is too costly to handle meats, milk, or butter because he has to install an expensive refrigerator? Does he say the meat packers and dairymen are trying to put something over on him? He knows that he cannot sell fresh meats or butter or milk that has not been kept cool. The change that takes place is easily detected by smell as

well as by sight. Would he dare offer for sale spoiled meat or butter even if the Health Departments allowed it?

Eggs spoil in warm places just as quickly as meats, butter, or milk. Fortunately, or unfortunately, the egg is encased in a shell that protects the contents from being seen or smelled. It is only by candling of the egg and later breaking it out that we can learn the difference in quality. Here is where enforcement of the Fresh Egg Law will help the merchant who is willing to buy and sell on grades. It sets up standards under which eggs may be labeled and sold as labeled. It prohibits misbranding or misrepresentation in any way. The merchant who sells good eggs on grade can prevent some merchant next door or down the street from advertising a low quality egg as a fresh egg.

Furthermore, the merchant is protected by the law because the party from whom he purchased his eggs is held liable if he misrepresents the quality of the eggs when he sold them. Under the law the merchant can sell eggs of any grade so long as he does not misrepresent the quality. The only restriction placed on the merchant is that he sell as advertised.

It has been pointed out that in some states where there are such laws, these laws are a farce. The fault there lies not in the fact that there are fresh egg laws but in the method of enforcement.

The Consumer

Enforcement of the Fresh Egg Law will enable the consumer to get what he pays for. With the establishment of quality grades will come increased confidence on the part of the consumer. The housewife has been "gypped" so often in egg quality that she hesitates to buy eggs. The merchant is not always to blame. Proper enforcement of the law will eliminate that condition. It will place eggs in a class of perishables with meats and dairy products. The consumer knows that when he buys 92 score butter it will be just that; if he buys No. 1 apples, they will be No. 1 apples. That does not place the lower grades at a disadvantage on the market. Neither does it have reference to food value or flavor. It gives those who want the best and are willing to pay for the best an opportunity to get it. The same thing should be true of eggs.

About 70% of the people in Baltimore City are in the lower income brackets, most of whom cannot afford to pay the higher prices for quality eggs. They will continue to buy lower grade eggs knowing they are not getting the best quality. One thing our industry should get behind is this: While lower grade eggs may not have the flavor of the higher quality eggs there is just as much food value in them. Seventy per cent of the purchases will be of lower grades and that is no small amount. Consider that out of every eight-and a-half dozen eggs sold there will be six dozen in the lower price brackets. What the producer is vitally interested in is to gain consumer confidence in all eggs offered for sale, not merely the top grades. Any wise enforce-

ment of the Fresh Egg Law that tends to increase the sale of all eggs will have the full support of the producers.

Enforcement

The Fresh Egg Law will be just what the enforcing agents make it. Considerable criticism is being directed at our law. One cannot deny, however, that it was the result of an honest attempt to separate fresh and non-fresh eggs at the dividing point on the grading scale. It was intended that the law should be practical, that it would protect "Fresh," and words of similar import for the higher grade eggs and yet permit those of lower quality to be marketed without designations that would injure their sale. However, if the law is improperly administered it may be the means of driving our fresh eggs off the Maryland market. If properly enforced, on the other hand, it will create a greater market for our fresh eggs.

There will be need of an educational period, if the law is to be made to work. The merchants will need to be shown how to handle their eggs so as to prevent degrading while on their hands. It would be neither fair nor wise to enforce the law rigidly without first allowing a probationary period in which the merchants may become thoroughly acquainted with its operation. Few producers or merchants are familiar with the law or its operation. I believe that most of the opposition to the law can be overcome if there is a disposition on the part of the enforcing agents to work with the producers and the trade, by showing them just how the law will benefit them personally.

The agents should be well-trained, broad-minded men who will be able to distinguish the willful violator from the honest, unintentional violator. It is the willful violator that the agents need to detect and punish. The first prosecutions should be of such willful and intentional violators with the evidence unimpeachable. There is no dividing line at which we can say all on this side are guilty and all on the other are not. It would not be right to crack down on some dealer for some violation that is no fault of his or that is beyond his control.

I know that the courts hold that ignorance of the law excuses no one. On the other hand, the foundation upon which all law is supposed to rest is the great principle of common sense, right, and justice to all. That is all we ask in the enforcement of the Fresh Egg Law.

BENEFITS GAINED FROM THE 4-H POULTRY PROJECT

GRACE KNOWLES, Bowie, Md.

The 4-H poultry project has benefited me in many ways.

Last spring when we started on our project we had no experience except what I had gotten from taking Poultry at Club Week and what we had gotten from our small farm flock which wasn't raised scientifically. We knew that raising chickens was not play, but we didn't realize that those little yellow balls would eat several tons of feed before

they were grown and that they would grow too old to be sold as friers so quickly.

It is a wise thing for boys and girls to begin on a 4-H project because we are taught to do things in a scientific way, rather than "harum-scarum" as some small flocks are run. Before we began our projects, the boys and girls who planned to have projects met several times. The sponsors of the project impressed upon us the importance of having the chicks' house and feeders and founts clean and attending to the chicks regularly. This was a wise measure in our case because before this year we had more or less let our chicks "just grow." Though we don't have time to give our flocks a great deal of study because of school, they have had a lot of care and it gives us a great deal of satisfaction to compare them with other flocks and see the difference.

Having a 4-H project has given us another advantage over other beginners in raising poultry. We have had the help of poultrymen in the Prince Georges County Association and at the University of Maryland. At different times they have come around to see what progress we were making and whenever we have asked them for any information they have willingly given it. They did such things as telling us when to change feed, offering suggestions for feeding more economically, and helping us to take several birds to the Southern Maryland Fair where, incidentally, a pen of our New Hampshires won second premium.

Our second project, as our first, has been rather successful. Any financial loss has been more than over-balanced by the experience we have gotten and the correct methods we have learned. Of course, we also have our equipment if we raise poultry next year.

I think the thrill of my life came when Mr. Snoddy came over one day last July and said to me, "How would you like a trip to Cleveland?" I was so surprised that I stood and stared. When he explained, I was even more thrilled. Though I came home from camp on Saturday afternoon and left for Cleveland the next morning early, I enjoyed myself thoroughly on the whole trip. By the time I came home I had seen so many things I could scarcely sort them over in my mind, but I think I learned more in the short time I was at the Poultry Congress than I ever did before or since in the same length of time. The things that interested me most were the parts of the U. S. government exhibit about feeding, pullorum-testing, worms, and housing, the brooders and batteries in the Hall of Industry and, of course, the nonsense such as the hen that ran in and out of a trap-nest and laid eggs. The whole was interesting and educational and would have been so to anyone, poultryman or otherwise. There have been many other opportunities equally beneficial that I would never have had had I not had my 4-H Poultry project.

In summing up the benefits of my project I would like to say that it has given me a very profitable way of using my spare hours in the summer, taught me much I didn't know about poultry, given me a trip to the World Poultry Congress, taught me a feeling of respon-

sibility, helped me discover that information and help in poultry raising is available from the Poultry Department of the University of Maryland and the County and State Poultry Associations, given me experience in keeping accounts, given me satisfaction in supplying customers with fresh poultry products, and given me a great deal of fun.

FUTURE FARMERS AND THE POULTRY INDUSTRY

EARL C. BAITY, JR., Street, Md.

From time immemorial fowls have entered closely into human life in a variety of ways. The high regard which the ancient people had for the fowl is recorded in the outbursts of the poets and the chronicles of the naturalists. The cock and the dog are sacred animals in the religion of Zoroaster. A verse attributed to Chanakya about 300 B. C. says that four things may be learned from a cock: To fight, to get up early, to eat with your family, and protect your spouse when she gets into trouble.

In China, the fowl was long esteemed primarily as an edible bird; in Persia, as an object of sacrifice; in India and Greece, as a fighter par excellence; and among many people as a bird of great religious significance.

Cock fighting has been the means of spreading the fowl so widely over the earth. The fowls were at first wild; then, as cock fighting was introduced, they were domesticated. Cock fighting has quite a history. When it was spread to England during the reign of Henry II, it was very popular but was later suppressed. It was again popular during Elizabeth's reign, but was banned by act of Parliament in 1849.

It is unlawful in the U. S. to use cocks for fighting. It seems to be going on though because recently a reporter was put in jail, after taking pictures of a cockfight, because he wouldn't tell where he got them. With the suppression of cock fighting as a public institution, poultry exhibitions had their inception.

The first poultry show was held in the city of Boston, in 1849. This started a growing interest in the then known breeds and varieties of fowl. Several fancy breeds were the main attraction, such as miniature Bantams, where smallness of size is the outstanding feature.

From the start, poultry has been the crux of many of our national, state and local farm shows. The World's Poultry Congress which was held in Cleveland, Ohio, this summer was the climax of all these. One of the main objectives of this congress was to inspire the Youth of the World, by inviting representatives of many countries, to come and participate in the Youth's Camp, that they may continue one of the world's most important industries.

As history has unfolded, the poultry industry has been an important factor in the building up of the human race. But, will it always be that way? That is the situation which we as Future Farmers have to face.

The first point to consider is the fact that the hen is one of the most efficient producers of human food in the world of today. Beef cattle production which used to be concentrated in the East is even now beginning to disappear in the West because the dairy cow which is a much more efficient animal has taken its place. The chicken also has followed in the wake of the so-called mass production where efficiency counts. The price received for the product is very high. Let us compare the product of the hen with that of the great cow Segis Peterjie Prospect which produced over 37,000 pounds of milk in one year. It would take 600 hens with an average of 200 eggs per hen to have gained the same nutrient value. But the amount received for the eggs would more than double that received from the milk.

The egg is not equaled in the fact that it contains complete proteins.

To secure information for this talk I recently sent out a questionnaire to poultrymen and to experiment stations in 32 states from Maine to California and from Oregon to Florida; and received replies from 70 farms and institutions representing 284,000 hens. The replies have been very interesting as well as enlightening.

I shall outline a few of the questions to you briefly.

The last question in the group was, "Do you feel that there is any great danger of the poultry industry being overdone to the extent that it would be hazardous for a young man to take up poultry production as a life work, if he enjoys working with birds." Some 92% said "No" and added that to prove their belief and confidence in the future of the poultry industry they were sending their boys to Agricultural Colleges for poultry training. Others cautioned that it was necessary to go into the work gradually; but there was always room at the top for those with practical knowledge, with good, sound business judgment, and who were determined to succeed.

Two forms of poultry specialization which are not overdone are pullet and capon raising. My studies show that it costs approximately $.87 to raise pullets to laying age, while 50% of the poultrymen believe capons to be as good moneymakers as turkeys.

Briefly, a few of the growing practices which the Future Farmer will meet are the use of double-decker and multi-story houses, flue ventilation and insulation, as well as range shelters and field range rotation.

The chief causes of loss with layers seems to be from pickouts, worms, paralysis, and respiratory troubles but mostly from paralysis. Some few said they lost a good many by after effects of coccidiosis and that they tried to control coccidiosis mostly by the milk treatment or by dry litter.

The fact that in Maryland about 2,500,000 chicks and chickens die every year from disease, bad heredity, malnutrition, or mismanagement notifies us as progressive Future Farmers that we have some real problems to solve.

Another question was that if they were breeders did they rely entirely on line breeding or did they introduce outside germ plasm. About 60% said they introduced outside germ plasm varying from every year to every few years. Some few were using both methods while about 30% were depending entirely on line breeding.

As for the average production of eggs per hen, they averaged from 150 to 250 eggs per year. This is a big difference but the majority said 200 eggs or better.

The trapnest records were from 295 to 354 eggs in contests. It was shown that several of the Maryland hatcheries are starting trapnesting this year.

There is a big chance of increasing the efficiency of production on Maryland farms. Maryland farms contain approximately three and one-half million hens, which last year produced 107 eggs per hen, this is 34 eggs less than the average of all New England. If Maryland would increase its production to the New England level it would mean over $2,000,000 greater returns to the farmer.

One factor every Future Farmer must decide is the number of hens to keep in the flock. A person who is trying to make a living at poultry must keep a rather large flock, in order to obtain a reasonably large income. It seems that from 1,200 to 1,500 hens is about the smallest number to depend on for a successful commercial poultry farm.

At Highland School each F. F. A. boy is required to keep a complete record of the home flock during the animal husbandry year. The studies of these records over a period of years reveals that on the small or average farm flock money is lost as often as gained. It also indicates that with the larger flock more care is taken and they are generally more profitable.

Few of the edible articles on the market have so many uses as do poultry products. There is no substitute for the fresh egg for breakfast. They can be used in a number of dishes, either with ham or bacon or in omelets or croquettes. Eggs are mild in flavor; therefore they will blend well with most other foods. In whatver way you serve eggs you have a good source of the minerals, proteins, and vitamins necessary for building the body and keeping it healthy.

Besides the value of eggs, poultry flesh is usually considered fully as nutritious in value as beef, pork, or mutton. Is there anyone who does not like fried chicken if it is prepared, cooked, and served in the right way? We Marylanders should be justly proud that "Maryland Fried Chicken" is famous the world over, being featured on the menu of the "Queen Mary" or even in a London Hotel.

Therefore, is that not reason enough for us as Future Farmers of America to join in Maryland's second largest Agriculture industry and improve it?

Meeting adjourned for lunch, 11:50 A. M.

THE VALUE OF PULLORUM TESTING TO MARYLAND HATCHERY OPERATORS

JOHN E. ALLEN, Stemmers Run, Md.

When approached by Dr. Jull of the State Department of Agriculture, relative to discussing this subject, I realized that he had asked something of me that in my estimation is one of the most important problems to the hatcherymen of Maryland.

The subject in itself indicates many years of thorough and complete work by our State Department of Agriculture and many worries and headaches to the hatcherymen.

Assuming that the hatcheries of today, as in earlier years, were more or less hesitant to listen to the well-weighed words of advice on pullorum testing from our State Department, and proceeded to operate their hatcheries as they wished.

The hatchery operator, when confronted by the state representative, was told of the various ways of pullorum disease being introduced in their breeding flocks through its cycle of infection in transmission from hen to egg, to chick, by means of contact in the breeding pen, lack of proper disinfection in the incubators, contamination in the brooder house, and so on to the coming flock of maturing pullets and on to a greater percentage of infection of the disease.

What did the hatchery operators do for themselves as well as their customers in neglecting to realize the value of pullorum testing? Some hatcheries viewed the disease with an indifferent attitude. Still more hatcheries being confident in their course of raising poultry refused to listen because they were operating under a fool proof system of cleanliness that would prevent any means for the infection gaining entrance into their breeding flocks.

The first type of hatchery operator continued in his business hatching and selling. To their sorrow they experienced losses caused by their neglect to test for the disease. Their chicks for future breeders were attacked by the malady and died. Their percentage of mortality soon started the hatcherymen to give their methods of chick rearing a rigid examination.

Soon their customers, witnessing the same experience in their flocks, tried to eliminate this growing percentage of mortality. After careful consideration of the problem, the customer assumed the malady to be the fault of the hatcheryman. After a serious outbreak of this kind, the hatcheryman began considering the value of testing.

Soon we see the hatchery operator asking advice of the State organization and the beginning of a thorough and successful work attained by the cooperation of the hatcheryman and the State Department through the following years to control the disease.

The hatcheryman who least realizes the value of the test soon witnesses great losses. When confronted by the irate customer, he must either replace the chicks and risk more losses or make a rebate.

The hatchery operator may still refuse the help of the State Department and continue to make adjustments. The other avenue of escape for him is to acquire a meager knowledge of testing and consider doing his own testing.

The time soon comes for this operator to begin testing and after several unfortunate experiences he discovers that the state, due to the scientific methods and unbiased opinions employed, can eliminate more disease from his flock and produce a better quality chick.

CAN A SUFFICIENT SUPPLY OF HIGH-QUALITY HATCHING EGGS FOR MARYLAND HATCHERIES BE OBTAINED WITHIN THE STATE?

E. F. HASTINGS, Parsonsburg, Md.

"Can a Sufficient Supply of High Quality Hatching Eggs for Maryland Hatcheries be Obtained Within the State?" . . . is the subject which has been assigned to me and the answer . . . at the present time . . . is, "No." The smaller hatcheries are now getting most of their eggs within the State but the larger hatcheries are getting only a small part of their cross eggs from Maryland.

I believe that the time is ripe for the Maryland poultrymen to take over the business of supplying Maryland hatcheries with cross eggs for broiler chicks . . . a business which the New England breeders have controlled for some years. Because of the troubles encountered with chicks from New England eggs we know that the New England breeders are becoming worried and I believe it will be only a matter of time before they will cease to supply the bulk of cross hatching eggs. Feed companies in New England have sent their service men to the Shore on numerous occasions during the past year in an effort to iron out these troubles. Broiler growers are not so insistent upon chicks from New England eggs as they once were and many are now asking for chicks from local eggs.

The New England breeders are killing the goose that laid the golden egg by using lights on their breeders, by feeding wet mash, and by breeding for high egg production. This forcing for every possible egg and the cutting of corners in the quality of feed has shown up eventually in the chicks with such troubles as vitamin deficiency, gizzard ulcers, tremors and other things seldom found in Maryland chicks. Down here the picture is different because we can visit the flocks frequently and see that they are properly fed and managed. Our local flocks can run out on green stuff most of the year and we believe this is why the chicks from local eggs are almost entirely free from the troubles found with chicks from New England eggs. Plenty of exercise and green food are necessary to produce the best hatching eggs and local flocks can get both while the New England flocks are never out of the houses.

If Maryland breeders will act quickly and go at it in the right way, they will be able to make real profits from their eggs every month in the year. We use over 100,000 eggs per week and have taken all of the eggs from our flock owners in New England on an average of over 48 weeks in the year so it is not a proposition that lasts just a few months in the year like Leghorn hatching eggs. Delaware poultry breeders are awake to the situation and many fine flocks in that State are now producing cross eggs from pullorum free breeding flocks.

The big demand is for cross hatching eggs . . . New Hampshire Red hens mated to Barred Rock males. It is not enough to get good New Hampshire Reds and then mate them to any old kind of Barred Rock males . . . New England breeders tried this but could not get away with it. Rhode Island Reds won't do either . . . they feather too slowly and are too bony. Maryland breeders who expect to produce cross hatching eggs should start with the best strains of New Hampshires and Barred Rocks. The chicks should be put out in January and February so as to produce eggs in the early fall, when eggs are scarce and high in price. Breeding flocks of one to five thousand breeders are better than smaller or larger flocks. The breeder with two or three thousand hens will manage his flock as a business proposition and live up to the necessary requirements because he has too much at stake to do otherwise. The New Hampshire pullets and the Barred Rock males should be put out in range shelters on clover as early as possible and fed so as to grow into big, husky breeding stock. Culling should be practiced every week and every slow feathering undersized bird removed from the flock. Faster feathering chicks are demanded by broiler raisers and you can't get that kind from parents that were slow to feather. It is not necessary to go into the problems of breeding, care of hatching eggs, grading, etc., as these are the same as in the production of any kind of hatching eggs. The requirements of the broiler growers are becoming more exacting all of the time and unless the breeder is willing to meet these requirements he is better off producing market eggs.

While I do not have the figures of the broiler business on the Shore for 1939 . . . I am sure that it required at least forty million eggs to produce the broiler chicks last year.

The opportunity is present and it is up to the Maryland poultry breeders to make the most of it. The number of eggs required is tremendous, so there is little chance of over-production for the breeder who will produce high quality hatching eggs.

THE VALUE OF R. O. P. WORK TO HATCHERY OPERATORS

H. L. ALTENBURG, Middle River, Md.

The subject assigned to me—The Value of R. O. P. Work to the Hatcherymen—is one of great economic importance to all hatcherymen in Maryland and one that merits careful consideration. I think I can best

answer this question by telling you how I carry out R. O. P. work on my place and then I am sure you will be able to see how R. O. P. breeding stock can help you.

I keep 8,000 White Leghorn layers on my place. Of course, all of these birds are not trapped, as that would be too expensive, but I do trap between 400 and 500 birds each year under R. O. P. supervision. This gives me enough good R. O. P. hens to mate 8 or 9 pens from which R. O. P. cockerels are produced to mate with my layers and also some surplus cockerels which are sold.

In my R. O. P. breeding program I not only breed for egg production but early maturity, egg size, size of birds, livability, and many other factors. In other words, the hens I use in my breeding pens are not selected on egg production alone, as I think it is a mistake to do this since the breeding value of a bird cannot be accurately judged by her egg production but must be judged by the number of daughters she will produce that will qualify as R. O. P. birds and the average egg production, egg weight, and body weight of the daughters.

One thing I would like to discuss here is the statement often made by hatcherymen that they cannot afford to use R. O. P. cockerels in their flocks because of the cost of such cockerels making it necessary to charge more for the chicks. My experience along this line has been that if you purchase a high quality chick, poultrymen are willing to pay for it and will come back year after year. It would seem to me that one of the best ways hatcherymen could increase their business would be through the production of a higher quality chick and from my experience the best way to do this is through the use of R. O. P. males. When you stop to consider that the male is 10 to 15 times as important as the female, since one male is mated to 10 to 15 females, then it is impossible for me to see where the use of R. O. P. males is expensive. Furthermore, R. O. P. males are certainly reasonable enough when you consider their breeding value and the cost to the R. O. P. breeder of producing such cockerels.

I think the use of R. O. P. cockerels is more important now than ever, since the price of eggs in relation to price of feed is very unfavorable at the present time and the only way to overcome this is through increased egg production per bird.

I hope I have been able to give you some idea of the value of R. O. P. work to hatcherymen and poultrymen. I feel that it is the best method of improving the quality of poultry in Maryland and I sincerely hope that Maryland hatcherymen will take advantage of the opportunity.

PROGENY TESTING IN BREEDING FOR INCREASED EGG PRODUCTION AND LIVABILITY

EARL B. HOWARD, Odenton, Md.

I have been asked to talk on trapnesting, pedigreeing and progeny testing this afternoon. I have never taken any courses of any kind in this work and only know my own way. It may be right and then again it may not be; that I will leave to you. Anyhow we have increased our

production approximately four dozen eggs per bird. I will endeavor to explain to you what our methods are, which we try to carry out as closely as our poultry income will permit.

About ten years ago we decided to trapnest a pen of pullets and see what we could do along that line. Well, we had some fine expectations as to what we were going to do to some of these records, but they gradually faded as the months of that first year rolled by. I think some of those birds were the originators of the sit-down strike in this country. But, we also had a few fair birds and to these we mated our best males. Well, the results were noticeable, but just slightly so.

For three or four years we continued this program and after reading everything I could get hold of and doing some looking around, I decided we could make some very much needed improvements in our program, as things were moving too slowly. So, we decided to erect several special pens, of which we have 12 today. Here we could put a small number of females and one male and in that way we could individually pedigree the chicks therefrom. After several years of this work we started progeny testing, which is one of the best ways to select good breeding birds. Sib-testing is another way we use in testing our males. Personally, I do not like to judge individuals on their own records, but rather on their family records. We have found that birds produce more nearly to their family average than they do toward the high individuals of the family. Therefore, I would take a low hen out of a family whose family average is above 200 eggs in preference to a hen whose record is up around 300 and whose sisters have laid poorly and pulled the family average down.

There are a number of other characteristics that you have to consider while trying to increase your egg production; such as body size, size of egg, shell texture and color, livability in the brooder house, livability in the laying house and hatchability, which is also an important factor. All of these and more do you have to watch and many times sacrifice a little of one character to get more of another that you may be weak in.

For the last 3 years we have been breeding for hatchability and livability both in the brooder house and the laying house, as well as for more and larger eggs. We usually start the season out with about 4 or 5 times as many cockerels as we will use for breeders. These are picked at first from only our best matings and along through the year we continue to cull these for vigor, etc. And also taking out those from families that did not come through as expected, then finally we pick our breeders from these according to how their full sisters have laid up to the time of the mating. However, all new males used in our special pens are selected from proven breeders who, in our case, must be from hens which are three years old or older, as we only breed from 2-year-old birds to start with. This year we have used no male whose dam's eggs did not hatch at least 81% of all eggs set and whose chicks did not live at least 95%. All these hens have egg records of 200 or more eggs and family averages of 200 or more eggs with an average

hen house livability of 88%, these eggs weighing 26 oz. and up. We are constantly trying to improve on our methods as well as our birds.

I hope I did not take too much of your time and in the near future to make a more definite report on our work. I thank you.

ANNUAL BUSINESS MEETING

Mr. J. W. Snoddy, Chairman of the Credentials Committee, reported the following directors and delegates as properly certified from affiliated associations:

QUEEN ANNE'S COUNTY POULTRY ASSOCIATION
Director—John H. Moffett, Centreville.
Delegates—Mrs. J. Edgar Bryan, Queenstown; William Ratcliffe, Millington.

MARYLAND TRI-COUNTY POULTRY ASSOCIATION
Director—Robert C. Street, Princess Anne.
Delegates—W. A. Spearin, Salisbury; L. L. Colona, Pocomoke.

DORCHESTER COUNTY POULTRY ASSOCIATION
Director—A. R. Peterson, Cambridge.
Delegates—R. M. Hammen, Linkwood; Walter Lankford, Vienna.

CECIL COUNTY POULTRY ASSOCIATION
Director—A. D. Coudon, Perryville.
Delegates—Mrs. J. A. Sten, North East; Emil Frantzi, Elkton.

PRINCE GEORGES COUNTY POULTRY ASSOCIATION
Director—J. W. Snoddy, Lanham.
Delegates—Ora Overholser, Bowie; T. R. Betts, Lanham.

CAROLINE COUNTY POULTRY ASSOCIATION
Director—Harry H. Rieck, Preston.
Delegates—Mildred R. Kern, Denton; Charles Dean, Ridgely.

TALBOT COUNTY POULTRY ASSOCIATION
Director—Mrs. W. W. Hopkins, Cordova.
Delegates—Miss Agnes Tilghman, Easton; Ivon T. Morton, Easton.

Upon motion made by Mrs. Mildred R. Kern, Caroline County, seconded by W. A. Spearin, Tri-County Association, and carried, the following alternates were substituted for this business meeting:

Mrs. Mae Roe Roberts for J. H. Moffett and Mark Miller for Mrs. J. Edgar Bryan for Queen Anne County; Mr. E. F. Hastings for L. L. Colona for Tri-County Association; Mr. J. J. Dunn for Mr. R. M. Hammen for Dorchester County and Perry W. Voshell for Charles Dean for Caroline County.

Treasurer's Report—Treasurer Cowan submitted his annual report as of January 8 showing total receipts of $1,929.29 plus cash in bank as of January 10, 1939, of $515.08 giving total receipts for 1939 of $2,444.37. Total expenses for 1939 were $1,093.11, plus cash in bank of $1,351.26 equals the $2,444.37, total receipts for 1939.

Mr. Coudon moved, Mr. Spearin seconded that the report be accepted. Motion carried.

Mr. Ivon T. Morton, chairman of Auditing Committee, reported Treasurer's accounts in good shape and in balance as appears in his detailed report.

Mr. Spearin moved, Mrs. Mildred R. Kern seconded that the Auditing Committee's report be accepted. Motion carried.

Election of Officers. Mr. W. A. Spearin, Chairman of Nominating Committee, reported the following nominations by the Committee: For President, Harry H. Rieck; First Vice-President, Mrs. W. W. Hopkins; Second Vice-President, J. W. Snoddy; Treasurer, Robt. C. Street, T. R. Betts, and Jno. J. Cowan.

Mr. A. D. Coudon moved, Mrs. Mildred R. Kern seconded that the nominations be closed for president and that Mr. Rieck be unanimously elected. Motion carried and the secretary cast a unanimous ballot.

Mrs. Mildred R. Kern moved, A. D. Coudon seconded that nominations for first and second vice-presidents be closed. Motion carried. The secretary cast a unanimous ballot for Mrs. W. W. Hopkins for first vice-president and J. W. Snoddy for second vice-president.

Mr. T. R. Betts made and Mr. A. R. Peterson seconded the nomination of Mr. Ora Overholser as treasurer. In the ensuing ballot Mr. John J. Cowan was re-elected treasurer.

For delegates to the Maryland Farm Bureau Federation, Mrs. Mildred Kern nominated and Mr. Ivon T. Morton seconded the names of Mr. J. W. Snoddy and Mrs. Mae Roe Roberts who were unanimously elected. In the ensuing ballot for delegates to the Northeastern Poultry Producers Council, Mrs. A. W. Sattler of Baltimore County and Robert C. Street, of Tri-County Association were elected.

Routine expenses. Upon motions duly made, seconded and passed, expenses of the President's office of $21.30 and Treasurer's office of $9.26 were ordered paid.

Legislative. The matter of legislative appropriations for pullorum testing and Fresh Egg Law enforcement were then discussed at length. Mr. W. A. Spearin moved, Mr. E. F. Hastings seconded that the State Poultry Council request the legislature to appropriate $25,000 for pullorum testing and $10,000 for Fresh Egg Law enforcement and that the Maryland Farm Bureau Federation be requested to support this request. Motion carried.

Treasurer Office. Mr. J. W. Snoddy moved, Mr. W. A. Spearin seconded that the Constitution of the Council be amended to exempt the

Treasurer of the Council from being required to be elected from voting members. This motion was carried and referred to the Resolutions Committee for review, and for providing 30 days' notice in writing to all voting members prior to the next annual Council meeting as provided in the Constitution.

Mileage for Directors. The matter of allowing mileage to Council directors in attending meetings was discussed. Mrs. Mae Roe Roberts moved, Mr. E. F. Hastings seconded that the directors be reimbursed at 2½c per mile for mileage actually driven to attend directors' meetings. Motion carried.

Summer Meeting. This matter was referred to the Directors upon motion made by Mr. A. R. Peterson, seconded by Mr. Walter Lankford and carried.

Incubator Egg Legislation. The New Jersey Law relative to incubator reject eggs was read by the secretary and discussed by several. Mr. Snoddy moved, Mr. Betts seconded that a committee be appointed to study this legislation and report to the Council. Motion carried and President Rieck appointed Mr. T. R. Betts, chairman, Mr. Earl B. Howard and Mr. E. F. Hastings to make this study.

Southern States Cooperative Application for Affiliation. After some discussion on the constitutional status of the Southern States Cooperative with reference to the Council, Mr. J. W. Snoddy moved, Mr. Ora Overholser seconded that the Southern States Cooperative be admitted to affiliation with the Council upon a basis of $1.00 fee per egg receiving station or $10.00 minimum per year. Motion carried.

National Poultry Planning Committee. Maryland's representation on and participation in this committee's work was discussed, and it was moved by Mr. W. A. Spearin, seconded by E. F. Hastings that the President represent Maryland at the Committee Meeting in Chicago on January 15 and further, that $45.00 towards expense of the trip be authorized. Motion carried.

Report of Resolutions Committee. By Mrs. W. W. Hopkins, Chairman.

The following resolutions were read and adopted upon motions duly made, seconded and carried:

1. Be it resolved that the Maryland State Poultry Council, in annual meeting assembled, representing the poultrymen of the State of Maryland, hereby requests that the Maryland Farm Bureau support, to the fullest extent, our request that the Governor direct the Director of the Budget to provide for a sum of $25,000 in the 1941-42 budget in lieu of the present $5,000 appropriation for controlling pullorum disease, typhoid disease, and other poultry diseases that cause several hundred thousand dollars loss annually to our poultry producers.

Be it further resolved that the Maryland Farm Bureau support our request for an appropriation of $10,000, in lieu of the present $6,000 appropriation, to adequately enforce the Maryland Fresh Egg Law, the

proper enforcement of which means so much to the egg market and to poultry producers.

2. Be it resolved that Article No. IV, section 1, in the Constitution be amended to read that all officers except the secretary and treasurer shall be elected annually from and by the voting members of the Council.

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